

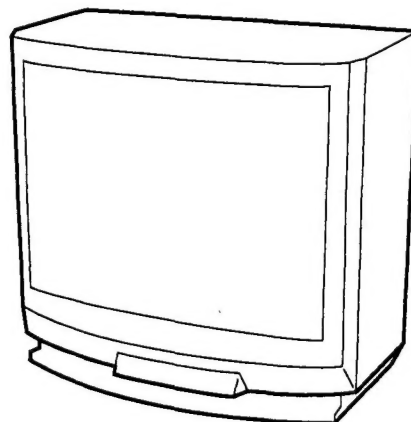
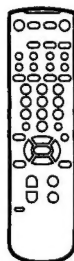
AA-2 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-27S20	RM-Y135	US	SCC-J71A-A	KV-32S20	RM-Y135	US	SCC-J71C-A
KV-27S20	RM-Y135	Canadian	SCC-J73A-A	KV-32S20	RM-Y135	Canadian	SCC-J73B-A
KV-27S25	RM-Y136	US	SCC-J71B-A	KV-32S25	RM-Y136	US	SCC-J71D-A
KV-27S25	RM-Y136	Canadian	SCC-J73F-A	KV-32S25	RM-Y136	Canadian	SCC-J73C-A
KV-29RS20	RM-Y135	E	SCC-J74A-A	KV-34RS20C	RM-Y135	E	SCC-J74G-A
KV-29RS20C	RM-Y135	E	SCC-J74E-A				
KV-29RS25	RM-Y136	E	SCC-J74B-A				
KV-29RS25C	RM-Y136	W	SCC-J74F-A				
KV-29SD1	RM-Y135	E	SCC-J74C-A				
KV-29PS1	RM-Y135	E	SCC-J74D-A				

Note :

1. Adjustment Manual for this model is separately published.

	Adjustment Manual
Part No.	9-965-811-01



TRINITRON® COLOR TV
SONY®

Specifications

		Model number				KV-32S20 KV-34RS20C		Notes	
Television system		American TV standard							
Channel coverage		VHF: 2-13 / UHF: 14-69 / CATV: 1-125							
Antenna		75-ohm external antenna terminal for VHF/UHF							
Picture tube		Hi Black Trinitron® tube							
Screen size (in.)		27				32		Measured diagonally	
Number of inputs/outputs									
Video		1				1		1 Vp-p, 75 ohms unbalanced, sync negative	
S video		0				0		Y: 1 Vp-p, 75 ohms unbalanced, sync negative C: 0.286 Vp-p (Burst signal), 75 ohms	
Audio		1				1		500 mVrms (100% modulation), Impedance: 47 kilohms	
Monitor out		0				0		1 Vp-p, 75 ohms unbalanced, sync negative	
Audio out		1				1		More than 408 mVrms at the maximum volume setting (variable) More than 408 mVrms (fix) Impedance: 5 kilohms	
Speaker output (W)		5W × 2				5W × 2			
Power requirements		a KV-27S20/29PS1/29RS20/ 29SD1				a KV-32S20		a= 120V, 60 Hz b= 220 V, 50/60 Hz	
		b KV-29RS20C				b KV-34RS20C			
Power consumption (W) When in use In standby		160 W (Max.) 9 W				180 W (Max.) 9 W			
Dimensions (W/H/D) (mm) (in.)		660.4 × 602.5 × 521.2 mm (26 × 23 ³ / ₄ × 20 ⁵ / ₈ in.)				781 × 712.1 × 582.5 mm (30 ³ / ₄ × 28 ¹ / ₈ × 23 in.)			
Mass (kg) (lbs)		40.6 kg (89 lbs 8 oz)				64.3 kg (141 lbs 12 oz)			

Supplied accessories

Remote commander RM-Y135 (1)

Size AA (R6) battery (2)

Optional accessories

Connecting cables VMC-810S/820S, VMC-720M, YC-15V/30V, RK-74A

TV stand SU-27A (KV-27S20/ /29PS1/29RS20/29RS20C/ 29SD1/ only)

TV stand SU-32A (KV-32S20/34RS20C only)

U/V mixer EAC-66

Design and specifications are subject to change without notice.

● SRS (SOUND RETRIEVAL SYSTEM)

The ● SRS (SOUND RETRIEVAL SYSTEM) is manufactured by Sony Corporation under license from SRS Labs Inc. It is covered by U.S. Patent No. 4,748,669. Other U.S. and foreign patents pending.

The word 'SRS' and the SRS symbol (●) are registered trademarks of the SRS Labs, Inc.

Specifications

	Model number					
	KV-27S25				KV-29RS25	KV-29RS25C
Television system	American TV standard					
Channel coverage	VHF: 2-13 / UHF: 14-69 / CATV: 1-125					
Antenna	75-ohm external antenna terminal for VHF/UHF					
Picture tube	Hi Black Trinitron® tube					
Screen size (in.)	27-inch picture measured diagonally					
Power requirements	120 V, 60 Hz	120 V, 60 Hz	120 V, 60 Hz	120 V, 60 Hz	120 V, 60 Hz	220 V, 50/60Hz
Number of inputs/outputs						
Video¹⁾	2				2	2
S video²⁾	1				1	1
Audio³⁾	2				2	2
Audio out⁴⁾	1				1	1
Monitor out¹⁾	—				—	—
TV out¹⁾	—				—	—
S-Link	—				—	—
Speaker output (W)	5W × 2				5W × 2	5W × 2
Power consumption (W)						
When in use (Max.)	165W				165W	165W
In standby	9W				9W	9W
Dimensions (W/H/D) (mm)	660.4 × 602.5 × 521.2 mm				660.4 × 602.5 × 521.2 mm	660.4 × 602.5 × 521.2 mm
(in.)	26 × 23 ³ / ₄ × 20 ⁵ / ₈ in.				26 × 23 ³ / ₄ × 20 ⁵ / ₈ in.	26 × 23 ³ / ₄ × 20 ⁵ / ₈ in.
Mass (kg)	40.6 kg				40.6 kg	40.6 kg
(lbs)	89 lbs 8 oz				89 lbs 8 oz	89 lbs 8 oz

¹⁾ 1 Vp-p, 75 ohms unbalanced, sync negative

²⁾ Y: 1 Vp-p, 75 ohms unbalanced, sync negative
C: 0.286 Vp-p (Burst signal), 75 ohms

³⁾ 500 mVrms (100% modulation), Impedance: 47 kilohms

⁴⁾ More than 408 mVrms at the maximum volume setting (variable)
More than 408 mVrms (fix)
Impedance: 5 kilohms

Model number KV-32S25	
Television system	American TV standard
Channel coverage	VHF: 2-13 / UHF: 14-69 / CATV: 1-125
Antenna	75-ohm external antenna terminal for VHF/UHF
Picture tube	Hi Black Trinitron® tube
Screen size (in.)	32-inch picture measured diagonally
Power requirements	120 V, 60 Hz
Number of inputs/outputs	
Video¹⁾	2
S video²⁾	1
Audio³⁾	2
Audio out⁴⁾	1
Monitor out¹⁾	—
TV out¹⁾	—
S-Link	—
Speaker output (W)	5W × 2
Power consumption (W) When in use (Max.) In standby	185W 9W
Dimensions (W/H/D) (mm) (in.)	781 × 712.1 × 582.5 mm 30 3/4 × 28 1/8 × 23 in.
Mass (kg) (lbs)	64.3 kg 141 lbs 12 oz

¹⁾ 1 Vp-p, 75 ohms unbalanced, sync negative

²⁾ Y: 1 Vp-p, 75 ohms unbalanced, sync negative
C: 0.286 Vp-p (Burst signal), 75 ohms

³⁾ 500 mVrms (100% modulation), Impedance: 47 kilohms

⁴⁾ More than 408 mVrms at the maximum volume setting (variable)
More than 408 mVrms (fix)
Impedance: 5 kilohms

Supplied accessories

Remote commander RM-Y136 (1) (KV-27S25/ /29RS25/
29RS25C/32S25
only)

Size AA (R6) battery (2)

Optional accessories

Connecting cables VMC-810S/820S, VMC-720M, YC-15V/30V,
RK-74A

TV Stand SU-27A (KV-27S25/ /29RS25/
29RS25C/ only)

TV Stand SU-32A (KV-32S25 only)

U/V mixer EAC-66

Design and specifications are subject to change without notice.

Feature packages

Model number	Feature	One-tuner Pip	Two-tuner Pip	S-Link/LightSensor/ SRS/Clock/Timer	Tilt correction
KV-27S25	•				
KV-29RS25	•				
KV-29RS25C	•				
KV-32S25	•				

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SAFETY CHECK-OUT

(US model only)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any). Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60-100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

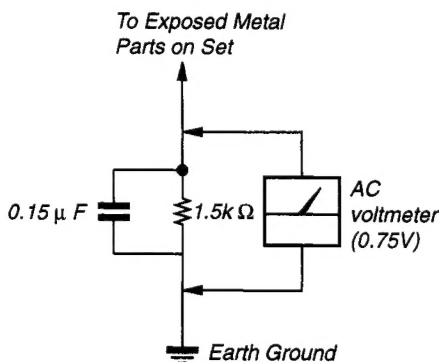


Fig. A. Using an AC voltmeter to check AC leakage.

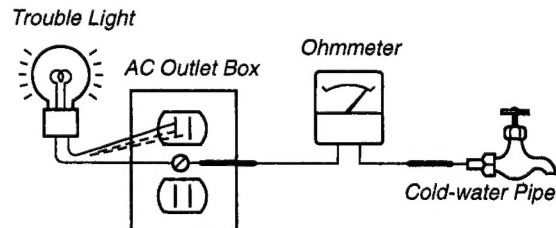


Fig. B. Checking for earth ground.

TABLE OF CONTENTS

Section	Title	Page
1. GENERAL		
	Hook up	7
	Setting up the remote commander	10
	Setting up the TV automatically (AUTO SET UP)	10
	Changing the menu language	11
	Watch the TV	12
	Adjusting the picture (VIDEO)	13
	Selecting the video mode (VIDEO)	13
	Adjusting picture brightness automatically (LIGHTSENSOR)	13
	Adjusting the sound (AUDIO)	14
	Using audio effect (EFFECT)	14
	Selecting stereo or bilingual programs (MTS)	15
	Setting the speaker switch (SPEAKER)	15
	Setting audio out	15
	Setting daylight saving time (DAYLIGHT SAVING)	15
	Setting the colck (CURRENT TIME SET)	16
	Setting the timer to turn the TV on and off (ON/OFF TIMER)	16
	Customizing the channel names (CHANNEL CAPTION) ..	16
	Blocking out a channel (CHANNEL BLOCK)	17
	Setting your favorite channels (FAVORITE CHANNEL)	17
	Setting Caption Vision (CAPTION VISION)	18
	Operating video equipment.....	18
	Operating a cable box DBS receiver.....	19
	Troubleshooting	19
	Watching two programs at a time-PIP	20

(CAUTION)

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.

THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ! ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL FOR SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

(ATTENTION)

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION!!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RA CCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE ! SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIÉCES SONT D'UNE IMPOR TANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIÉS DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

SECTION 1 GENERAL

The operation instruction mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual. (Part no: 3-810-852-21)

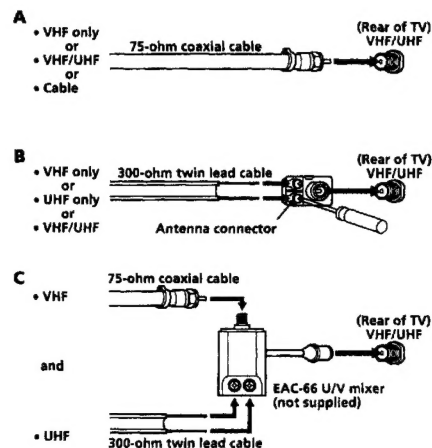
Getting Started

Step 1: Hookup

Although you can use either an indoor or outdoor antenna with your TV, we recommend that you connect an outdoor antenna or a cable TV system to get better picture quality.

How to connect different types of cables

The illustrations below show examples of connecting cables to the TV directly.



Notes

- Most VHF/UHF combination antennas have a signal splitter. Remove the splitter before attaching the appropriate connector.
- If you use the U/V mixer, snow and noise may appear in the picture when viewing cable TV channels over 37.

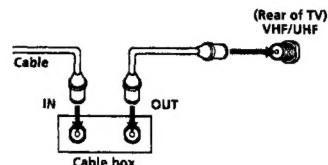
Connecting an antenna/cable TV system without a VCR

If your cable company requires you to connect a cable box, make the connection as follows:

Cable or antenna



Cable box

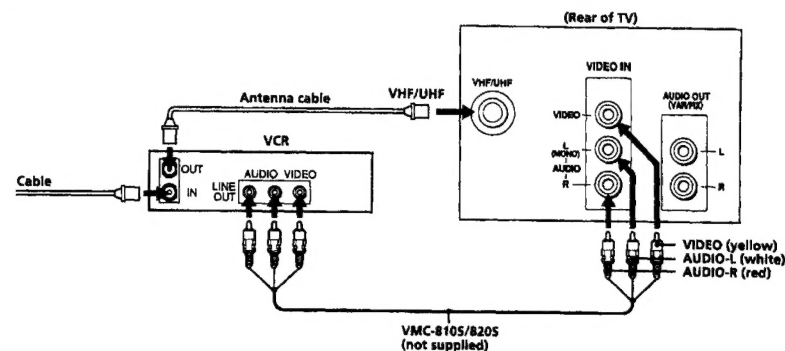


Connecting an antenna/cable TV system with a VCR

To connect your VCR to the TV, first check the model number of your TV and select the corresponding connection. For details on connection, see the instruction manual of your VCR.

Before making the connection, disconnect the AC power cords of the equipment to be connected.

Without a cable box



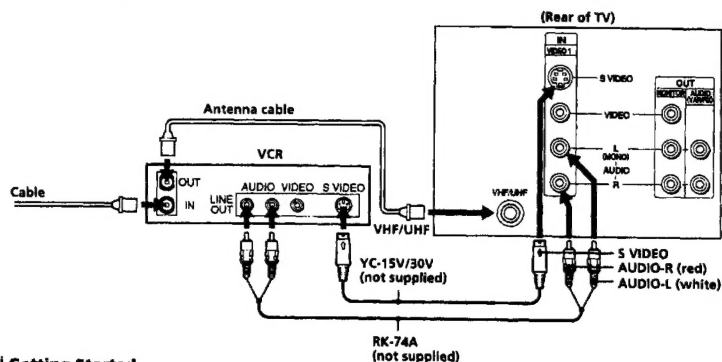
Note

- To connect a monaural VCR, connect the audio output of the VCR to AUDIO-L (mono) of VIDEO IN on the TV.

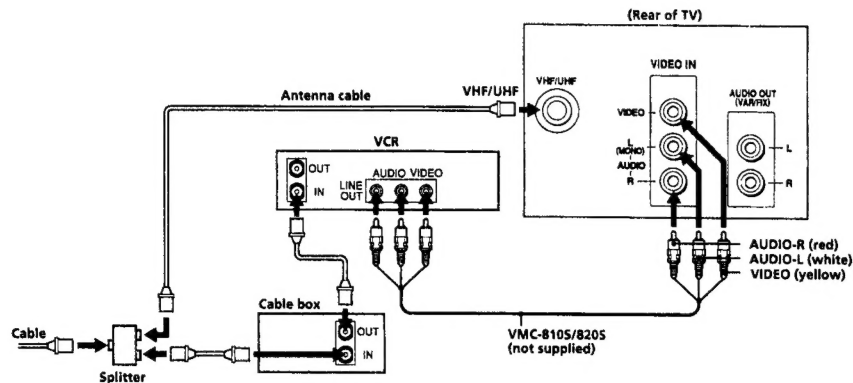
To an S video equipped VCR without a cable box

■ KV-27V20/29V20M only

If your VCR has an S video output jack, make the following connections.



With a cable box

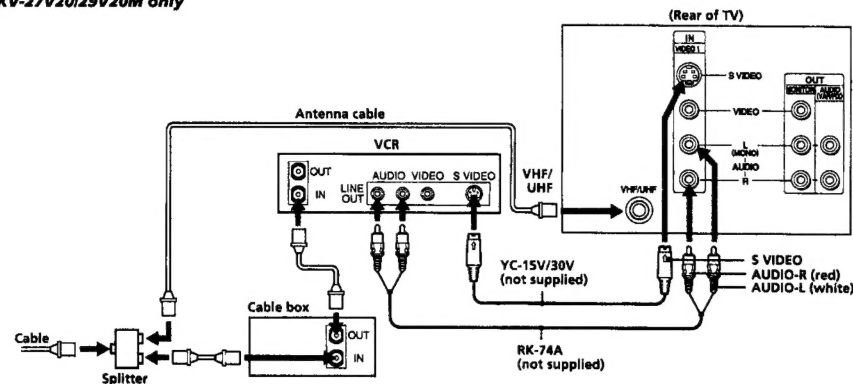


Note

- To connect a monaural VCR, connect the audio output of the VCR to AUDIO-L (mono) of VIDEO IN on the TV.

To an S video equipped VCR with a cable box

■ KV-27V20/29V20M only



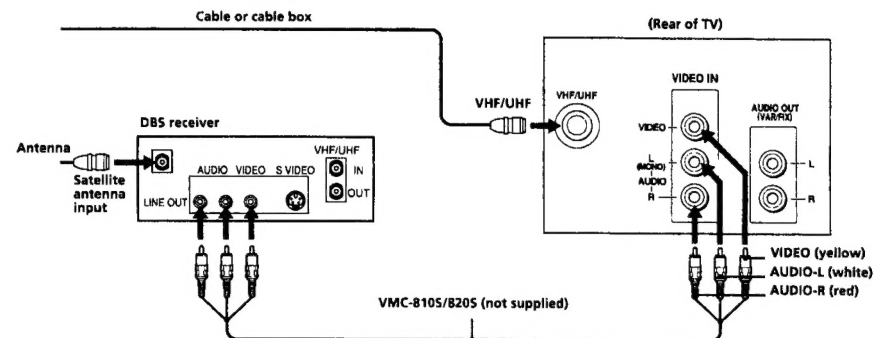
Note

- Video signals are composed of Y (luminance) and C (chroma) signals. The S connection sends the two signals separately preventing degradation, and gives better picture quality compared to conventional connections.

Connecting a DBS receiver

For connection details, see the instruction manual of the DBS (Digital Broadcasting Satellites) receiver.

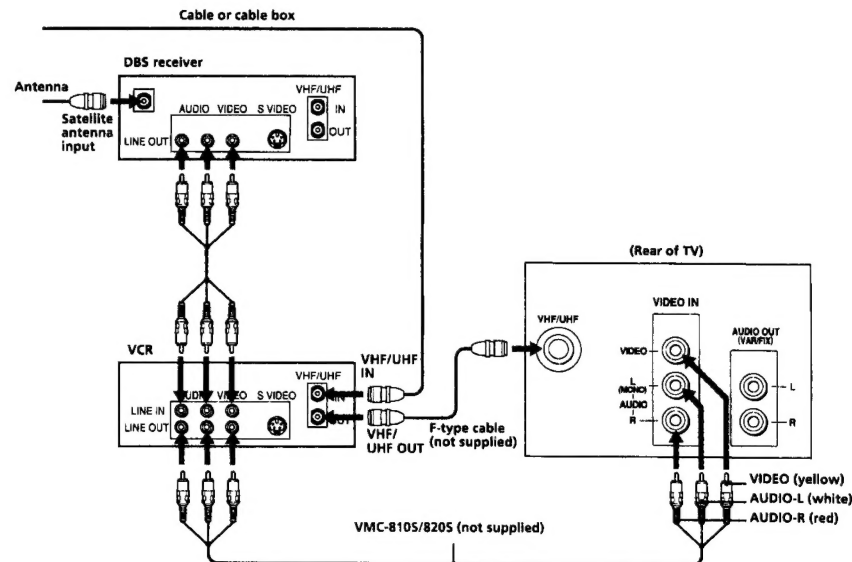
To a TV



Note

- You can use the S VIDEO jack or the composite video jack for the video connection.

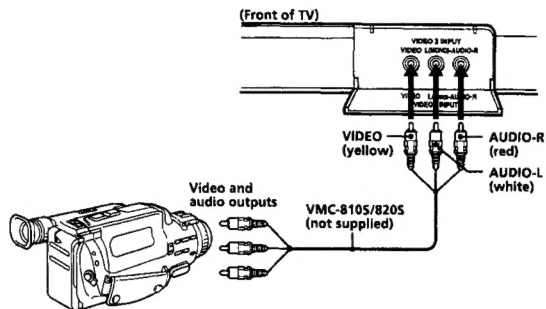
To a TV and VCR



Connecting a camcorder

■ KV-27V20/29V20M only

This connection is convenient for viewing a camcorder picture.

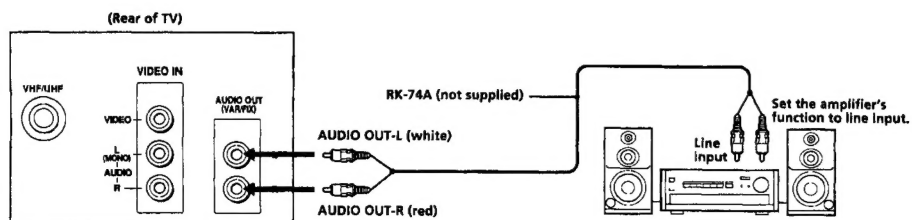


Note

- To connect a monaural camcorder, connect the audio output of the camcorder to AUDIO-L (mono) of VIDEO 2 INPUT on the TV.

Connecting an audio system

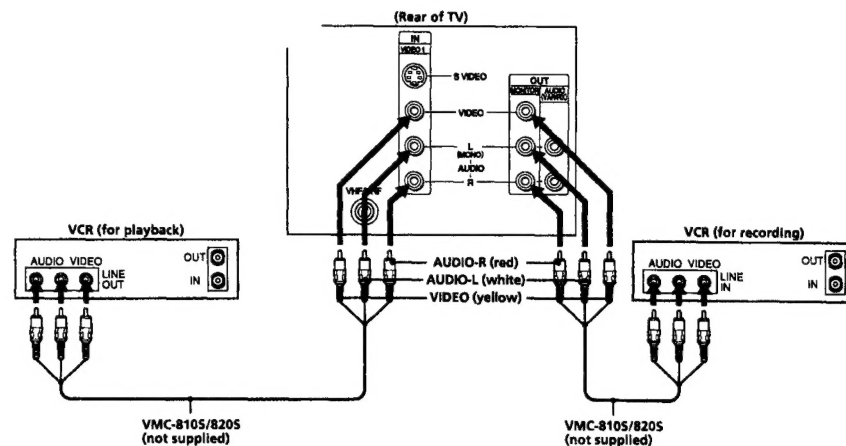
When connecting audio equipment, see pages 21-22 for more information.



Connecting two VCRs for tape editing using MONITOR OUT

■ KV-27V20/29V20M only

MONITOR OUT allows you to record a program that is on the screen.

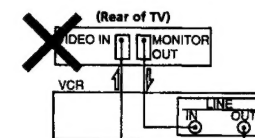


The above type of connection should only be used when you connect from the line input of one VCR, and from the line output of a second VCR.

Notes

- Do not change the input signal while editing through MONITOR OUT, or the output signal will also change.
- You can use the S video jack to connect a VCR for playback and the composite video jack to connect a VCR for recording.

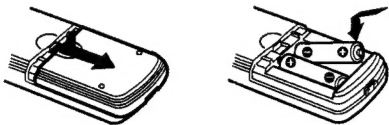
- When connecting a single VCR to the TV, do not connect the MONITOR OUT jacks at the rear of the TV to the VCR's line input, while at the same time connecting from the TV's VIDEO IN jacks to the VCR's line output, as shown below.



Step 2: Setting up the remote commander

Inserting batteries

Insert two size AA (R6) batteries (supplied) by matching the + and - on the battery to the diagram inside the battery compartment.



Notes

- Under normal conditions, batteries will last up to six months. If the remote commander does not operate properly or the indicators of the buttons on the remote commander do not light up, the batteries may be worn out. When replacing batteries, replace both of them with new ones.
- Do not mix old batteries with new ones or mix different types of batteries together.
- If the electrolyte inside the battery should leak, wipe the contaminated area of the battery compartment with a cloth and replace the old batteries with new ones. To prevent the electrolyte from leaking, remove the batteries when you don't plan to use the remote commander for a long period of time.
- Do not handle the remote commander roughly. Do not drop it, step on it or let it get wet.
- Do not place the remote commander in direct sunlight, near a heater, or where the humidity is high.

Getting to know buttons on the remote commander

Names of buttons on the remote commander are indicated in different colors to represent the available functions.

Button color

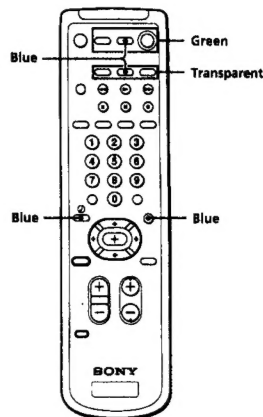
Transparent TV/VCR/DBS/Cable box function (light up) buttons. Press the appropriate function button first to change the remote commander's function.

Green Buttons relevant to power operations.

Label color

White TV/VCR/DBS/Cable box operation buttons.

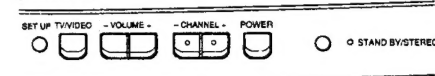
Blue DBS operation buttons.



Step 3: Setting up the TV automatically (AUTO SET UP)

You can set up your TV easily by using the AUTO SET UP feature. It presets all the receivable channels. To set up the TV manually, see "Setting cable TV on or off" (page 14) and "Presetting channels" (page 14).

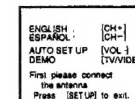
(Front of TV)



Before you start using AUTO SET UP, be sure to connect the antenna or cable to the TV (see page 5).

1 Press POWER to turn on the TV.

The AUTO SET UP screen appears.

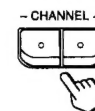


Note

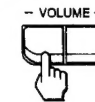
- The AUTO SET UP screen appears whenever you press the POWER button if you do not execute AUTO PROGRAM.

2 (Except Canadian models)

Press CHANNEL + to select English screens or CHANNEL - to select Spanish screens.



3 Press VOLUME -.



AUTO PROGRAM

"AUTO PROGRAM" appears on the screen and the TV starts scanning and presetting channels automatically. When all the receivable channels are stored, "AUTO PROGRAM" disappears and the lowest numbered channel is displayed. If the TV receives cable TV channels, CABLE is set to ON automatically.

To perform AUTO SET UP again

- Press SET UP on the TV.
- (Except Canadian models) Press CHANNEL + or CHANNEL - to select the language.
- Press VOLUME -. The picture and sound settings will be set to the factory preset conditions.
- Press CHANNEL +. "AUTO PROGRAM" appears on the screen and the TV starts scanning and presetting channels.
- Press CHANNEL - to exit the AUTO SET UP menu.

To exit AUTO PROGRAM

Press any button.

Note

- If the TV is set to a video input, you cannot execute AUTO SET UP. Press TV (black button) so that a channel number appears.

To browse the main functions (DEMO)

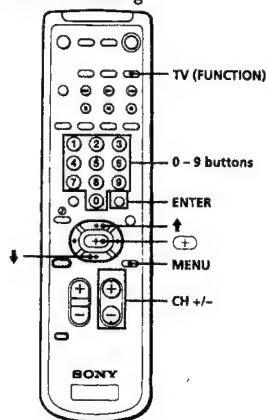
Press TV/VIDEO on the TV in step 3. The functions and menus are displayed one by one.

To exit DEMO

Press any button.

Erasing or adding channels

After AUTO SET UP, you can erase unnecessary channels or add the channels you want. Preset channels during the day rather than late at night, when some channels may not be broadcasting.



1 Press TV (FUNCTION).

— FUNCTION —



2 Press MENU.

The main menu appears.



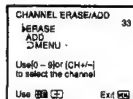
3 Press + or + to select , and press .

The SET UP menu appears.



4 Press + or + to select CHANNEL ERASE/ADD, and press .

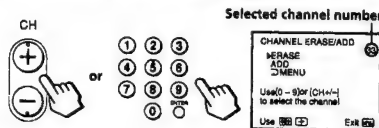
The CHANNEL ERASE/ADD menu appears.



5 Erase and/or add channels:

To erase an unwanted channel

- (1) Make sure the cursor (▶) is beside ERASE.
- (2) Press CH +/- or the 0-9 buttons to select the channel you want to erase, and press ENTER.



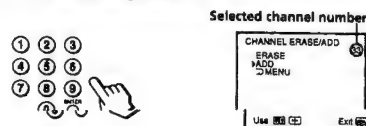
- (3) Press .

The "—" indication appears beside the channel number, showing that the channel is erased from the preset memory.



To add a channel that you want

- (1) Press + or + to move the cursor (▶) to ADD.
- (2) Press the 0-9 buttons to select the channel you want to add, and press ENTER.



- (3) Press .

The "+" indication appears beside the channel number, showing that the channel is added to the preset memory.



6 To erase and/or add other channels, repeat step 5.

7 Press MENU to return to the original screen.



Note

- If you erase or add a VHF or UHF channel, the cable TV channel with the same number is also erased or added, and vice versa.



Setting cable TV on or off

If you have connected the TV to a cable TV system, set CABLE to ON (the factory setting). If not, set CABLE to OFF. You do not have to do this procedure if you execute AUTO SET UP (page 12). Do this procedure only when you want to set it manually.

1 Press MENU.

2 Press + or + to select , and press .

3 Set CABLE to ON or OFF:

- (1) Press + or + to select CABLE, and press .
- (2) Press + or + to select ON or OFF, and press .



4 Press MENU to return to the original screen.

Note

- If CABLE appears in gray, the TV is set to a video input and you cannot select CABLE. Press TV (black button) so that a channel number appears.

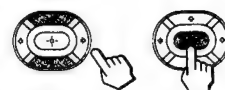
Presetting channels

You can preset TV channels easily by using the AUTO PROGRAM feature. You do not have to do this procedure if you execute AUTO SET UP (page 12). Do this procedure only when you want to set it manually.

1 Press MENU.

2 Press + or + to select , and press .

3 Press + or + to select AUTO PROGRAM, and press .



4 Press MENU to return to the original screen.

To exit AUTO PROGRAM

Press any button.

Note

- If the AUTO PROGRAM menu appears in gray, the TV is set to a video input and you cannot select AUTO PROGRAM. Press TV (black button) so that a channel number appears.

Changing the menu language

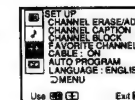
■ Except Canadian models

If you prefer Spanish to English, you can change the menu language. You do not have to do this procedure if you select the language during AUTO SET UP (page 12).

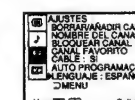
1 Press MENU.

2 Press + or + to select , and press .

3 Press + or + to select LANGUAGE, and press .



4 Press + or + to select your favorite language, "ENGLISH" or "ESPAÑOL," and press .

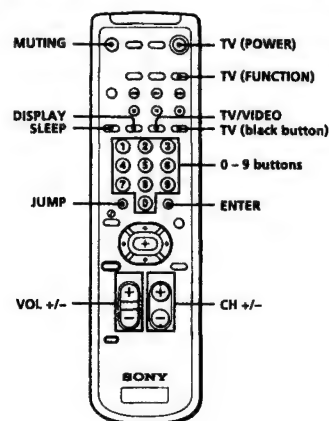


5 Press MENU to return to the original screen.

Note

- Certain parts of the Spanish menus remain in English.

Watching the TV

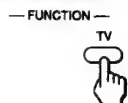


1 Press TV (POWER) to turn on the TV.



If "VIDEO" appears on the screen, press TV (black button) so that a channel number appears.

2 Press TV (FUNCTION).



Once you press TV (FUNCTION), the TV function is set unless another function button is pressed.

3 Select the channel you want:

To select a channel directly

Press the 0-9 buttons, and press ENTER.

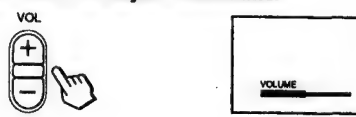
To scan through channels

Press CH +/- until the channel you want appears.



The channel can also be selected without pressing ENTER.

4 Press VOL +/- to adjust the volume.



Switching quickly between two channels

You can use the JUMP button to switch or "jump" back and forth between two channels.

Press JUMP.



Pressing JUMP again switches back the channel.

Note

- You cannot jump to channels you scanned through using the CH +/- buttons.

Muting the sound

Press MUTING.

"MUTING" appears on the screen.

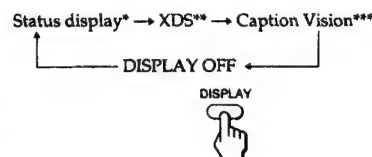


To restore the sound, press MUTING again, or press VOL +.

Displaying on-screen information

Press DISPLAY repeatedly until the desired display appears.

Each time you press DISPLAY, the display changes as follows:



* Channel number, the current time (only for available models), channel caption (if set), and MTS mode (if SAP is selected) are displayed. SAP indication disappears after three seconds.

** Some programs are broadcast with XDS (Extended Data Service) which shows a network name, program name, program type, program length, call letters, and time of the show. When you select XDS with the DISPLAY button, this information will be displayed on the screen if the broadcaster offers this service.

*** Some programs are broadcast with Caption Vision. When you select Caption Vision with the DISPLAY button, Caption Vision will be displayed on the screen if the broadcaster offers this service. (See page 27 for selecting Caption Vision.)

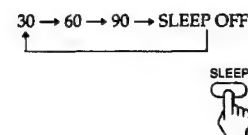
To cancel the display, press DISPLAY repeatedly until "DISPLAY OFF" appears. "DISPLAY OFF" goes off after three seconds.

Setting the Sleep Timer

The TV stays on for the length of time you specify and then shuts off automatically.

Press SLEEP repeatedly until the time (minutes) you want appears.

Each time you press SLEEP, the time changes as follows:



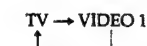
To cancel the Sleep Timer, press SLEEP repeatedly until "SLEEP OFF" appears, or turn the TV off.

Watching a video input picture

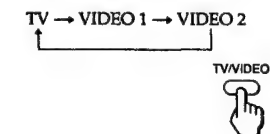
Press TV/VIDEO repeatedly until the desired video input appears.

Each time you press TV/VIDEO, the display changes as follows:

■ KV-27S20/29PS1/29RS20/29RS20C/29SD1/32S20/34RS20C only



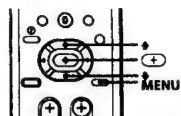
■ KV-27V20/29V20M only



To return to the TV picture, press TV (black button) so that a channel number appears.

Adjusting the picture (VIDEO)

When watching TV programs, you can adjust the picture to suit your taste. You can adjust the picture of video input(s) as well. These settings are stored separately from those for the TV picture.



1 Press MENU.

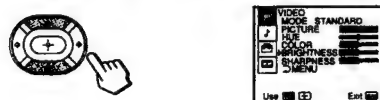
2 Press + or + to select , and press +.



3 Select the item you want to adjust.

For example:

(1) To adjust the brightness, press + or + to move the cursor (▶) to BRIGHTNESS.



(2) Press +.



4 Adjust the selected item:

(1) Press + or + to adjust the item.



(2) Press +.

The new setting appears in the VIDEO menu.



For details on each item, see "Description of adjustable items" below.

5 To adjust other items, repeat steps 3 and 4.

6 Press MENU to return to the original screen.

Description of adjustable items

Item	Press + to	Press + to
PICTURE	Decrease picture contrast and give soft color.	Increase picture contrast and give vivid color.
HUE	Make picture tones become purplish.	Make picture tones become greenish.
COLOR	Decrease color intensity.	Increase color intensity.
BRIGHTNESS	Darken the picture.	Brighten the picture.
SHARPNESS	Soften the picture.	Sharpen the picture.

To restore the factory settings

Press RESET while the VIDEO menu is displayed. All the settings are restored to the factory settings.

Selecting the video mode (VIDEO)

The video mode feature allows you to choose three different modes of picture settings. Choose the one that best suits the type of program that you want to watch.

1 Press MENU.

2 Press + or + to select , and press +.

3 Press + or + to select MODE, and press +.

4 Press + or + to select STANDARD, MOVIE, or SPORTS mode, and press +.



Choose	To
STANDARD	Receive a standard picture.
MOVIE	Receive a finely detailed picture.
SPORTS	Receive a vivid, bright picture.

5 Press MENU to return to the original screen.

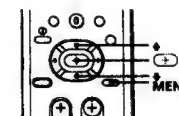
Note

- The settings for these modes can be adjusted in the VIDEO menu.

Adjusting picture brightness automatically (LIGHTSENSOR)

■ KV-27V20/29V20M only

The LightSensor feature adjusts the brightness of the picture automatically according to the ambient brightness.



1 Press MENU.

2 Press + or + to select , and press +.

3 Press + or + to select LIGHTSENSOR, and press +.



4 Press + or + to select ON or OFF, and press +.



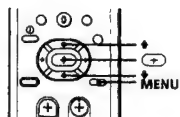
5 Press MENU to return to the original screen.

Note

- The LightSensor function may malfunction if you stand or place objects in front of the TV.

Adjusting the sound (AUDIO)

You can adjust the TV sound to suit your taste. You can adjust the sound of the video input(s) as well. These settings are stored separately from those for the TV sound.



1 Press MENU.

2 Press + or - to select J, and press .



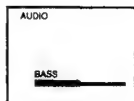
3 Select the item you want to adjust.

For example:

(1) To adjust bass, press + or - to move the cursor (►) to BASS.

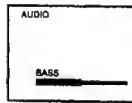
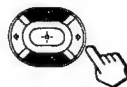


(2) Press .



4 Adjust the selected item:

(1) Press + or - to adjust the item.



(2) Press .

The new setting appears in the AUDIO menu.



For details on each item, see "Description of adjustable items" below.

5 To adjust other items, repeat steps 3 and 4.

6 Press MENU to return to the original screen.

Description of adjustable items

Item	Press + to	Press - to
TREBLE	Decrease the treble response.	Increase the treble response.
BASS	Decrease the bass response.	Increase the bass response.
BALANCE	Emphasize the left speaker's volume.	Emphasize the right speaker's volume.

To restore the factory settings

Press RESET while the AUDIO menu is displayed.

Note

- When SPEAKER (page 21) is OFF and AUDIO OUT (page 22) is in the FIXED condition, the volume, TREBLE, BASS, and BALANCE cannot be adjusted.

Using audio effect (EFFECT)

Using the (audio effect) button

■ For KV-27S20/29P51/29R520/29R520C/29SD1/32S20/34R520C only

Press .

Each time you press the button, the display changes as follows:

SURROUND → SURROUND OFF



■ For KV-27V20/29V20M only

Press .

Each time you press the button, the display changes as follows:

SRS → SIMULATED → EFFECT OFF

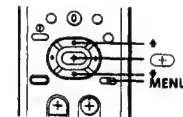


Choose	To
SURROUND	Simulate sound reproduction with the atmosphere of a movie theater or a concert hall. Surround sound is only effective for stereo programs.
SRS	When the program's audio signal is stereo or encoded, SRS expands the material and embraces you with dynamic three-dimensional sound.
SIMULATED	Receive monaural sound with a surround-like effect.

Note

- To use the button function, press TV (FUNCTION).

Using the menu to set audio effect



1 Press MENU.

2 Press + or - to select J, and press .

3 Press + or - to select EFFECT, and press .



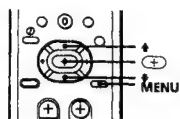
4 Press + or - to select the audio effect mode, and press .



5 Press MENU to return to the original screen.

Selecting stereo or bilingual programs (MTS)

The Multichannel TV Sound (MTS) feature allows you to enjoy stereo sound or Second Audio Programs (SAP) of your choice. The initial setting is stereo sound (MAIN).



- 1 Press MENU.
- 2 Press + or + to select J, and press +.
- 3 Press + or + to select MTS, and press +.



- 4 Press + or + to select MAIN, SAP, or MONO, and press +.



Choose	To
MAIN	Listen to stereo sound. The STEREO indicator on the TV lights up when a stereo broadcast is received.
SAP	Listen to bilingual programs. There is no sound when the SAP signal is not broadcasting.
MONO	Listen to monaural sound. Reduce noise during stereo broadcasts.

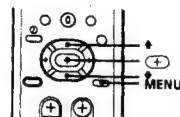
- 5 Press MENU to return to the original screen.

Note

- Stereo and SAP sounds are subject to program sources.

Setting the speaker switch (SPEAKER)

You may switch off the TV speakers when, for example, you want to listen to the sound through a stereo system.



- 1 Press MENU.
- 2 Press + or + to select J, and press +.
- 3 Press + or + to select SPEAKER, and press +.



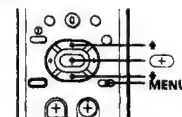
- 4 Press + or + to select ON or OFF, and press +.



- 5 Press MENU to return to the original screen.

Setting audio out (AUDIO OUT)

You can change AUDIO OUT to VARIABLE or FIXED when SPEAKER is set to OFF. AUDIO OUT is variable when SPEAKER is set to ON.



- 1 Press MENU.
- 2 Press + or + to select J, and press +.
- 3 Press + or + to select AUDIO OUT, and press +.



- 4 Press + or + to select VARIABLE or FIXED, and press +.



VARIABLE: Sound output varied according to the TV settings. You can adjust the volume, bass, treble, and balance.

FIXED: Sound output is always fixed to a certain level. The volume, bass, treble, and balance are also fixed to the factory settings.

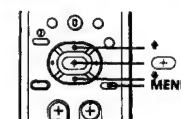
- 5 Press MENU to return to the original screen.

Note

- If AUDIO OUT appears in gray, set SPEAKER to OFF.

Setting daylight saving time (DAYLIGHT SAVING)

■ KV-27V20/29V20M only



- 1 Press MENU.
- 2 Press + or + to select J, and press +.
- 3 Press + or + to select DAYLIGHT SAVING, and press +.



- 4 Press + or + to select YES or NO, and press +.



Choose To

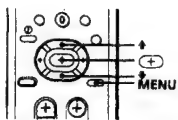
YES	Set for daylight saving start. The current time automatically moves one hour ahead.
NO	Set for daylight saving end.

- 5 Press MENU to return to the original screen.

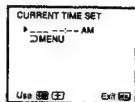
Setting the clock (CURRENT TIME SET)

■ KV-27V20/29V20M only

Setting the clock enables you to turn the TV on and off with the timer. Make sure to set daylight saving time first.



- 1 Press **MENU**.
- 2 Press **+** or **-** to select **○**, and press **+**.
- 3 Press **+** or **-** to select **CURRENT TIME SET**, and press **+**.



- 4 Make sure the cursor (▶) is to the left of "--:-- AM," and press **+**.



- 5 Set the current time.

- (1) Press **+** or **-** to set the day, and press **+**.



- (2) Set the hour and minutes in the same way as in step (1). When you press **+** after setting the minutes, the clock starts.

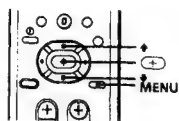


- 6 Press **MENU** to return to the original screen.

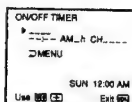
Setting the timer to turn the TV on and off (ON/OFF TIMER)

■ KV-27V20/29V20M only

You can set the TV to turn on and off at the times you specify. Make sure the clock is set correctly. If it is not, set the clock first.



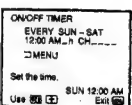
- 1 Press **MENU**.
- 2 Press **+** or **-** to select **○**, and press **+**.
- 3 Press **+** or **-** to select **ON/OFF TIMER**, and press **+**.



- 4 Press **+** and enter the **ON/OFF TIMER** setting.

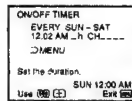
- (1) Press **+** or **-** to set the day(s), and press **+**.

Each time you press **+** or **-**, the days cycle as follows:
EVERY SUN-SAT → EVERY MON-FRI → SUNDAY → ... → SATURDAY → EVERY SUNDAY → ... → EVERY SATURDAY



(continued)

- (2) Press **+** or **-** to set the time (hour then minutes) that you want to turn on the TV, and press **+**.



- (3) Press **+** or **-** to set the time duration, and press **+**.

Each time you press **+**, the time duration increases by one hour up to a maximum of six hours.



- (4) Press **+** or **-** to select the channel, and press **+**.



The **TIMER** indicator on the TV lights up.

- 5 Press **MENU** to return to the original screen.

One minute before the TV turns off, the message "TV will be off soon." is displayed on the screen.

To cancel the timer

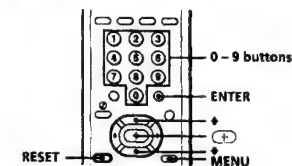
In step 3 or 4, press **RESET**.

Note

- If you unplug the TV or a power interruption occurs, the **ON/OFF TIMER** setting will be erased. Reset the current time, then set the timer.

Customizing the channel names (CHANNEL CAPTION)

You can add a caption for up to 12 channels. This feature allows you to easily identify which channel you are watching. You can make your own caption.



- 1 Press **MENU**.
- 2 Press **+** or **-** to select **○**, and press **+**.



- 3 Press **+** or **-** to select **CHANNEL CAPTION**, and press **+**.



- 4 Press **+** and press **+** or **-** to select the channel that you want to caption, and press **+**.

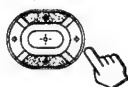


5 Enter the letters (up to four) to caption the channel:

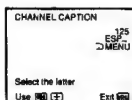
(1) Press \blacktriangle or \blacktriangledown to select the first letter.

Each time you press \blacktriangle or \blacktriangledown , the letter changes as follows:

0 \leftrightarrow 1 \leftrightarrow ... \leftrightarrow 9 \leftrightarrow A \leftrightarrow B \leftrightarrow ... \leftrightarrow Z \leftrightarrow / \leftrightarrow (blank space)



(2) Press \rightarrow .



(3) Repeat steps (1) and (2) to select the remaining letters, and press \rightarrow .

6 To caption other channels, repeat steps 4 and 5.

7 Press MENU to return to the original screen.

After you customize the channel, the channel caption appears green.

To erase a caption

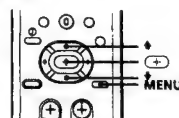
In step 5, press RESET.

Notes

- If the CHANNEL CAPTION menu appears in gray, the TV is set to a video input, and you cannot select CHANNEL CAPTION. Press TV (black button) so that a channel number appears.
- If more than 90 seconds elapse after you press a button, the menu disappears automatically.

Blocking out a channel (CHANNEL BLOCK)

The channel block feature allows you to prevent children from watching unsuitable programs. You can block out two channels.



1 Press MENU.

2 Press \blacktriangle or \blacktriangledown to select \blacksquare , and press \rightarrow .

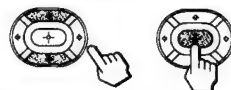
3 Press \blacktriangle or \blacktriangledown to select CHANNEL BLOCK, and press \rightarrow .



4 Press \blacktriangle or \blacktriangledown to select 1 or 2, and press \rightarrow .



5 Press \blacktriangle or \blacktriangledown to select the channel which you want to block out, and press \rightarrow .



6 Press MENU to return to the original screen.

When you select the blocked channel "BLOCKED" appears on the screen.



To cancel a CHANNEL BLOCK setting

In step 4 or 5, press RESET.

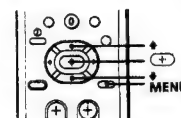
Note

- Once you use CHANNEL BLOCK, Caption Vision and XDS of the blocked channel and the selected channel output from TV OUT/MONITOR OUT are also blocked out.

Setting your favorite channels (FAVORITE CHANNEL)

The favorite channel feature allows your TV to memorize your favorite channels easily. If you set to AUTO, the last five channels you selected with the 0-9 buttons are automatically set as your favorite channels. If you want to input your own selection of channels, set to MANUAL.

Setting your favorite channels



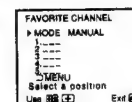
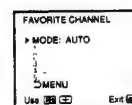
1 Press MENU.

2 Press \blacktriangle or \blacktriangledown to select \blacksquare , and press \rightarrow .

3 Press \blacktriangle or \blacktriangledown to select FAVORITE CHANNEL, and press \rightarrow .



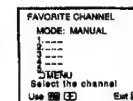
4 Press \rightarrow and press \blacktriangle or \blacktriangledown to select AUTO or MANUAL, and press \rightarrow .



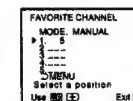
If you select AUTO, skip steps 5 and 6. The last five channels you selected with the 0-9 buttons are automatically set as your favorite channels.

If you select MANUAL, the favorite channel numbers become white, indicating that favorite channels can be entered.

5 Press \blacktriangle or \blacktriangledown to select a favorite channel number, and press \rightarrow .



6 Press \blacktriangle or \blacktriangledown to select the channel that you want to set as your favorite channel, and press \rightarrow .

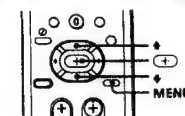


7 Press MENU to return to the original screen.

Notes

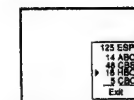
- If the FAVORITE CHANNEL menu appears in gray, the TV is set to a video input and you cannot select FAVORITE CHANNEL.
- If more than 90 seconds elapse after you press another button, the menu disappears automatically.

Selecting your favorite channel



1 Press \rightarrow .

The FAVORITE CHANNEL menu appears.



2 Press \blacktriangle or \blacktriangledown to select the favorite channel you want to watch, and press \rightarrow .

The selected channel appears on the screen.

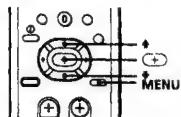


To cancel the FAVORITE CHANNEL menu

Press \blacktriangle or \blacktriangledown to select "Exit," and press \rightarrow .

Setting Caption Vision (CAPTION VISION)

Some programs are broadcast with Caption Vision. To display Caption Vision, select either CC1, CC2, CC3, CC4, TEXT1, TEXT2, TEXT3, or TEXT4 from the menu. CC1, CC2, CC3, or CC4 shows you a caption, that is a printed version of the dialogue or sound effects of a program. (The mode should be set to CC1 for most programs.) TEXT1, TEXT2, TEXT3, or TEXT4 shows you text, that is information presented using either half or the whole screen. It is not usually related to the program.



1 Press MENU.

2 Press + or - to select and press .



3 Press + or - to select the caption type, and press .



4 Press MENU to return to the original screen.

To display Caption Vision

Press DISPLAY. (See page 16 for details.)

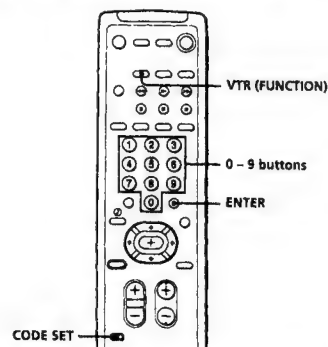
Notes

- Poor reception of TV programs can cause errors in Caption Vision and XDS.
- Captions may appear with a white box or other errors instead of a certain word.
- XDS, Caption Vision, and the status display cannot be used at the same time.
- For details on XDS, see page 16.

Operating video equipment

You can use the supplied remote commander to operate Sony or non-Sony video equipment that has an infrared remote sensor. For this operation, set the manufacturer's code number.

Setting the manufacturer's code



Press the CODE SET, VTR (FUNCTION), and 0-9 buttons to enter the manufacturer's code number (see the chart in the following page), then press ENTER. For example, to operate a Sony 8 mm VCR, press CODE SET, VTR (FUNCTION), 3, 0, 2, and ENTER.



(continued)

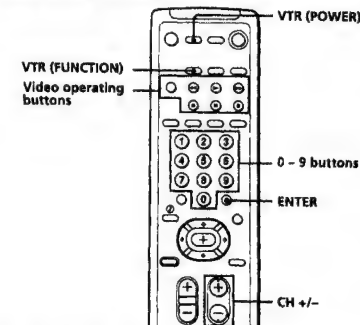
VCR manufacturer code numbers

Manufacturer	Code number
Sony	301, 302, 303
Aiwa	338
Audio Dynamic	314, 337
Bell & Howell (M. Wards)	330, 343
Brocsonic	319
Canon	309, 308
Citizen	332
Craig	315, 302, 332
Curtis Mathis	304, 338, 309
Daewoo	341, 312, 309
DBX	314, 336, 337
Dimensia	304
Emerson	319, 320, 316, 317, 318
Fisher	330, 334, 335, 333
Funai	338
General Electric	329, 304, 309
Goldstar	332
Hitachi	306, 304, 305
Instant Replay	309, 308
JC Penny	309, 305, 304, 330, 314, 336, 337
JVC	314, 336, 337
Kenwood	314, 336, 332, 337
LXI (Sears)	332, 305, 333, 334, 330, 335
Magnavox	308, 309
Marantz	314, 336, 337
Marta	332
Memorex	309, 335
Minolta	305, 304
Mitsubishi/MGA	323, 324, 325, 326
Multitech	325, 338, 321
NEC	314, 336, 337
Olympic	309, 308
Panasonic	308, 309, 306, 307
Pentax	305, 304
Philco	308, 309
Philips	308, 309
Pioneer	308
Quasar	308, 309
RCA/PROSCAN	304, 305, 308, 309, 311, 312, 313
Realistic	309, 330, 328, 335, 324, 338
Sansui	314
Singer	315
Samsung	322, 313, 321
Sanyo	330, 335
Scott	312, 313, 321, 335, 323, 324, 325, 326
Sharp	327, 328
Shintom	315
Signature 2000 (M. Wards)	338, 327
Sylvania	308, 309, 338
Symphonic	338
Tashiro	332
Tatung	314, 336, 337
Teac	314, 336, 338, 337
Technics	309, 308
Toshiba	312, 311
Wards	327, 328, 335, 331, 332
Yamaha	330, 314, 336, 337
Zenith	331

Notes

- If more than one code number is listed, try entering them one by one, until you come to the correct code for your equipment.
- In some rare cases, you may not be able to operate your non-Sony video equipment with the supplied remote commander. This is because your equipment may use a code that is not included with this remote commander. In this case, please use the equipment's own remote control unit.
- The code numbers for Sony equipment are assigned at the factory as follows:
VHS VCR 301 (preset code for the supplied remote commander)
8 mm VCR 302
Beta, ED Beta VCRs 303
- Whenever you remove the batteries — to replace them, for example — if too much time is taken, the code numbers may revert to the factory settings and must be reset.

Operating video equipment



Use the video operating buttons on the remote commander to operate the video equipment. Press VTR (FUNCTION) before operating the video equipment.

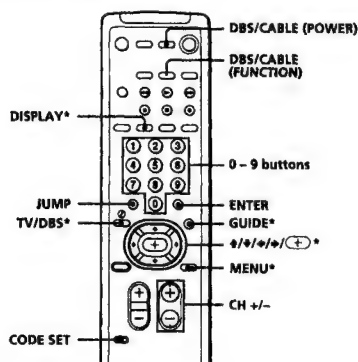
Operating a VCR	Buttons on the remote commander
To turn on or off	Press VTR (POWER).
To select a channel directly	Press the 0-9 buttons.
To change channels	Press CH +/-.
To record	Press while pressing . First release , then release .
To play	Press .
To stop	Press .
To fast forward	Press .
To rewind the tape	Press .
To pause	Press .
To resume normal playback.	press again.
To search the picture forward or backward	Press or during playback.
To resume normal playback.	release the button.
To change input mode	Press TV/VTR.

Note

- If the video equipment does not have a certain function, the corresponding button on this remote commander will not operate.

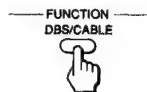
Operating a cable box or DBS receiver

You can program the supplied remote commander to operate a cable box or DBS receiver. Follow the procedures below to set the manufacturer's code number in the remote commander.

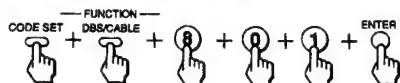


* The TV/DBS, GUIDE, DISPLAY, $\uparrow/\downarrow/\leftarrow/\rightarrow$, and MENU buttons can be used only with a DBS receiver.

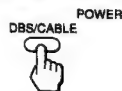
- 1 Turn off the equipment you want to set up, and press DBS/CABLE (FUNCTION).



- 2 Press the CODE SET, DBS/CABLE (FUNCTION), and 0-9 buttons to enter the manufacturer's code number (see the chart), then press ENTER. For example, to program your remote commander to operate a Sony DBS receiver, press CODE SET, DBS/CABLE (FUNCTION), 8, 0, 1, and ENTER.



- 3 Press DBS/CABLE (POWER) to turn on the cable box or DBS receiver.



- 4 Use the cable box/DBS control buttons to check if the code number works.

For example, to operate a cable box or DBS receiver, you can use the DBS/CABLE (POWER), JUMP, CH +/-, 0-9 and ENTER buttons.

Note

- If the cable box or DBS receiver does not have a certain function, the corresponding button on this remote commander will not operate.

To operate the TV

Press TV (FUNCTION). Then use the TV control buttons to control the TV.

For more details on operating the cable box or DBS receiver

Refer to the operating instructions that come with the equipment.

If the remote commander doesn't work

- First, try repeating the setup procedures using the other codes listed for your equipment.

Manufacturer code numbers (cable box)

Manufacturer	Code number
Hamlin/Regal	222, 223, 224, 225, 226
Jerrold/G. I.	201, 202, 203, 204, 205, 206, 207, 208, 218
Oak	227, 228, 229
Panasonic	219, 220, 221
Pioneer	214, 215
Scientific Atlanta	210, 211
Tocom	216, 217
Zenith	212, 213

Manufacturer code numbers (DBS receiver)

Manufacturer	Code number
Sony	801 (preset code for the supplied remote commander)

Notes

- If more than one code number is listed, try entering them one by one until you come to the correct code for your equipment.
- If you enter a new code number, the code number you previously entered at that setting is erased.
- In some rare cases, your equipment may use a code that is not provided with this remote commander and you may not be able to operate your equipment with the supplied remote commander. In this case, use the equipment's own remote control unit.
- Whenever you remove the batteries — to replace them, for example — if too much time is taken, the code numbers may revert to the factory setting and must be reset.

Additional Information

Troubleshooting

If the problem persists after trying the methods below, contact your nearest Sony dealer.

No picture (screen not lit), no sound

- ➔ Make sure the power cord is connected securely.
- ➔ Operate with the buttons on the TV.
- ➔ Insert the batteries in the remote commander with the correct polarity.
- ➔ Replace the batteries with new ones if they are weak.
- ➔ Check to see if the TV/VIDEO setting is correct: when watching TV, set to TV, and when watching video tapes, set to VIDEO1 or 2.
- ➔ Try another channel. It could be station trouble.
- ➔ Perform AUTO SET UP again using the SET UP button to return to the factory preset condition. (page 12)

Poor or no picture (screen lit), good sound

- ➔ Adjust PICTURE in the VIDEO menu. (page 17)
- ➔ Adjust BRIGHTNESS in the VIDEO menu. (page 17)
- ➔ Check antenna/cable connections.
- ➔ Perform AUTO SET UP again using the SET UP button to return to the factory preset condition. (page 12)
- ➔ Remove objects from the front of TV.
- ➔ Check the LIGHTSENSOR setting in the VIDEO menu. (page 18)

Good picture, no sound

- ➔ Press MUTE so that "MUTE" disappears from the screen. (page 15)
- ➔ Check the MTS setting in the AUDIO menu. (page 21)
- ➔ Make sure SPEAKER is set to ON in the AUDIO menu. (page 21)
- ➔ Perform AUTO SET UP again using the SET UP button to return to the factory preset condition. (page 12)

No color

- ➔ Adjust the COLOR in the VIDEO menu. (page 17)
- ➔ Black and white programs cannot be seen in color.
- ➔ Perform AUTO SET UP again using the SET UP button to return to the factory preset condition. (page 12)

Only snow and noise appear on the screen

- ➔ Check the CABLE setting in the SET UP menu. (page 14)
- ➔ Check the antenna/cable connections.
- ➔ Make sure the channel is broadcasting programs.
- ➔ Press TV (black button) to change the input mode. (page 16)

Dotted lines or stripes

- ➔ Adjust the antenna.
- ➔ Move the TV away from noise sources such as cars, neon signs, and hair-dryers.

Double images or ghosts

- ➔ Use a highly directional outdoor antenna or a cable (when the problem is caused by reflections from nearby mountains or tall buildings).

Cannot operate menu

- ➔ If the item you want to choose appears in gray, you cannot select it. Press TV/VIDEO correctly.

Cannot receive upper channels (UHF) when using an antenna

- ➔ Make sure CABLE is OFF in the SET UP menu. (page 14)
- ➔ Use AUTO PROGRAM to add receivable channels that are not presently in TV memory. (pages 13, 14)

Cannot receive any channels when using cable TV

- ➔ Make sure CABLE is ON in the SET UP menu. (page 14)
- ➔ Use AUTO PROGRAM to add receivable channels that are not presently in TV memory. (pages 13, 14)

Remote commander does not operate

- ➔ Batteries could be weak. Replace the batteries.
- ➔ Make sure the TV's power cord is connected securely to the wall outlet.
- ➔ Press TV (FUNCTION) when operating your TV.
- ➔ Are fluorescent lights too close to the TV? Move them at least 3-4 feet away from the TV.

Cannot gain enough volume when using a cable box

- ➔ Increase the volume at the cable box. Then press TV (FUNCTION) and adjust the TV's volume.

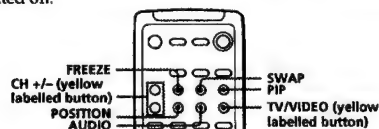
The TV needs to be cleaned

- ➔ Clean the TV with a soft dry cloth. Never use strong solvents such as thinner or benzene, which might damage the finish of the cabinet.

Watching two programs at a time — PIP

The Picture-in-Picture (PIP) feature allows you to watch both the main picture and a window picture simultaneously.

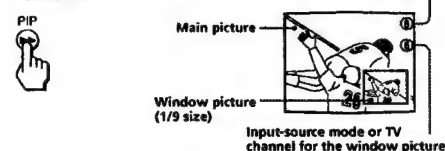
For KV-27S25/27V25/29RS25/29RS25C/29V65M/32S25/32TW25/32V25, your TV must be connected to a VCR to enjoy this feature. See "Connecting an antenna/cable TV system with a VCR" (page 6) for connections. In order to operate PIP, your VCR must be turned on.



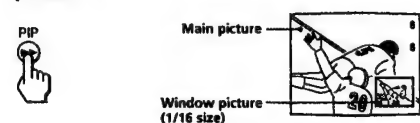
Use the yellow labelled buttons for PIP operations.

Displaying a window picture

Press PIP.



Press PIP again to display a smaller window picture.



To remove the window picture, press PIP again.

Note

- The window picture may be affected by the condition of the main picture.

Changing the window picture input mode

Press TV/VIDEO (yellow labelled button) to select the input mode.

Each time you press TV/VIDEO (yellow labelled button), "TV," "VIDEO 1," "VIDEO 2," and "VIDEO 3 (KV-27V25/27V35/29V35C/29V65M/29V75M/32V25/32V35/34V35C/35V35/35V45/35V75 only)" appear in sequence.



A window picture will appear in the same input mode as the last time you used PIP.

Note

- If you use one of the connections from page 6, your PIP input source is a VCR. If you use one of the connections from page 7, your PIP input source is a VCR or cable box.

Listening to the sound of the window picture

Press AUDIO.

The display appears next to the PIP channel number for a few seconds, indicating that the window picture sound is being received.

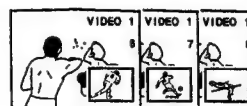
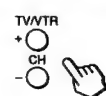


The sound of the window picture is received.

To restore the main picture sound, press AUDIO again. The display moves to the main picture channel number.

Changing TV channels in the window picture

Press CH +/- (yellow labelled button).

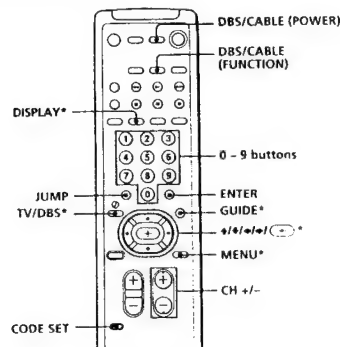


*Only page part no3-810-687-21(Operating Instruction Manual).

The operation instruction mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.(Part no: 3-810-687-21)

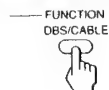
Operating a cable box or DBS receiver

You can program the supplied remote commander to operate a cable box or DBS receiver. Follow the procedures below to set the manufacturer's code number in the remote commander.



* The TV/DBS, GUIDE, DISPLAY, $\star/\star/\star/\star/\star$, and MENU buttons can be used only with a DBS receiver.

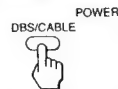
1 Turn off the equipment you want to set up, and press DBS/CABLE (FUNCTION).



2 Press the CODE SET, DBS/CABLE (FUNCTION), and 0-9 buttons to enter the manufacturer's code number (see the chart), then press ENTER. For example, to program your remote commander to operate a Sony DBS receiver, press CODE SET, DBS/CABLE (FUNCTION), 8, 0, 1, and ENTER.



3 Press DBS/CABLE (POWER) to turn on the cable box or DBS receiver.



4 Use the cable box/DBS control buttons to check if the code number works.

For example, to operate a cable box or DBS receiver, you can use the DBS/CABLE (POWER), JUMP, CH +/-, 0-9 and ENTER buttons.

Note

- If the cable box or DBS receiver does not have a certain function, the corresponding button on this remote commander will not operate.

To operate the TV

Press TV (FUNCTION). Then use the TV control buttons to control the TV.

For more details on operating the cable box or DBS receiver

Refer to the operating instructions that come with the equipment.

If the remote commander doesn't work

- First, try repeating the setup procedures using the other codes listed for your equipment.

Manufacturer code numbers (cable box)

Manufacturer	Code number
Hamlin/Regal	222, 223, 224, 225, 226
Jerrold/G. I.	201, 202, 203, 204, 205, 206, 207, 208, 218
Oak	227, 228, 229
Panasonic	219, 220, 221
Pioneer	214, 215
Scientific Atlanta	210, 211
Tocom	216, 217
Zenith	212, 213

Manufacturer code numbers (DBS receiver)

Manufacturer	Code number
Sony	801 (preset code for the supplied remote commander)

Notes

- If more than one code number is listed, try entering them one by one until you come to the correct code for your equipment.
- If you enter a new code number, the code number you previously entered at that setting is erased.
- In some rare cases, your equipment may use a code that is not provided with this remote commander and you may not be able to operate your equipment with the supplied remote commander. In this case, use the equipment's own remote control unit.
- Whenever you remove the batteries → to replace them, for example → if too much time is taken, the code numbers may revert to the factory setting and must be reset.

Troubleshooting

If the problem persists after trying the methods below, contact your nearest Sony dealer.

No picture (screen not lit), no sound

- Make sure the power cord is connected securely.
- Operate with the buttons on the TV.
- Insert the batteries in the remote commander with the correct polarity.
- Replace the batteries with new ones if they are weak.
- Check to see if the TV/VIDEO setting is correct: when watching TV, set to TV, and when watching video tapes, set to VIDEO1, 2 or 3.
- Try another channel. It could be station trouble.
- Perform AUTO SET UP again using the SET UP button to return to the factory preset condition. (page 15)

Poor or no picture (screen lit), good sound

- Adjust PICTURE in the VIDEO menu. (page 22)
- Adjust BRIGHTNESS in the VIDEO menu. (page 22)
- Check antenna/cable connections.
- Perform AUTO SET UP again using the SET UP button to return to the factory preset condition. (page 15)
- Remove objects from the front of TV.
- Check the LIGHTSENSOR setting in the VIDEO menu. (page 24)

Good picture, no sound

- Press MUTE so that "MUTING" disappears from the screen. (page 19)
- Check the MTS setting in the AUDIO menu. (page 26)
- Make sure SPEAKER is set to ON in the AUDIO menu. (page 27)
- Perform AUTO SET UP again using the SET UP button to return to the factory preset condition. (page 15)

No color

- Adjust the COLOR in the VIDEO menu. (page 22)
- Black and white programs cannot be seen in color.
- Perform AUTO SET UP again using the SET UP button to return to the factory preset condition. (page 15)

Only snow and noise appear on the screen

- Check the CABLE setting in the SET UP menu. (page 17)
- Check the antenna/cable connections.
- Make sure the channel is broadcasting programs.
- Press TV (black button) to change the input mode. (page 20)

Dotted lines or stripes

- Adjust the antenna.
- Move the TV away from noise sources such as cars, neon signs, and hair-dryers.

Double images or ghosts

- Use a highly directional outdoor antenna or a cable (when the problem is caused by reflections from nearby mountains or tall buildings).

Cannot operate menu

- If the item you want to choose appears in gray, you cannot select it. Press TV/VIDEO correctly.

Cannot receive upper channels (UHF) when using an antenna

- Make sure CABLE is OFF in the SET UP menu. (page 17)
- Use AUTO PROGRAM to add receivable channels that are not presently in TV memory. (pages 15, 17)

Cannot receive any channels when using cable TV

- Make sure CABLE is ON in the SET UP menu. (page 17)
- Use AUTO PROGRAM to add receivable channels that are not presently in TV memory. (pages 15, 17)

Remote commander does not operate

- Batteries could be weak. Replace the batteries.
- Make sure the TV's power cord is connected securely to the wall outlet.
- Press TV (FUNCTION) when operating your TV.
- Are fluorescent lights too close to the TV? Move them at least 3-4 feet away from the TV.
- Check the S-Link connection. (page 10)

Cannot gain enough volume when using a cable box

- Increase the volume at the cable box. Then press TV (FUNCTION) and adjust the TV's volume.

TV malfunctions when using the S-Link function

(KV-27V25/27V35/29V35C/29V65M/29V75M/32V25/32V35/34V35C/35V35/35V45/35V75 only)

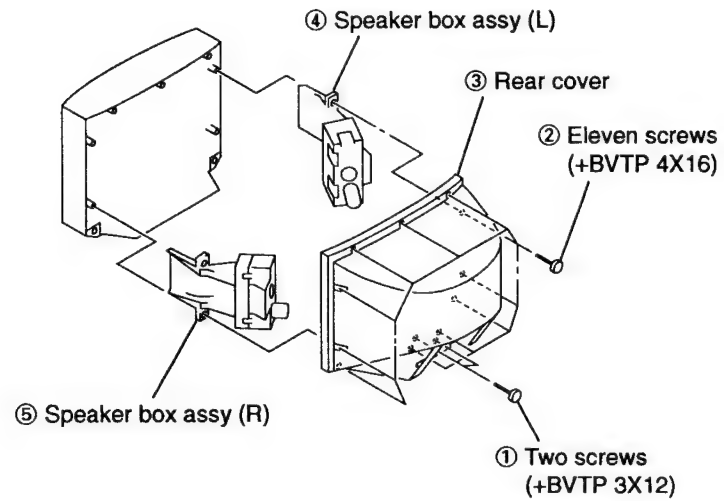
- Make sure the TV's power cord is connected securely to the wall outlet.
- Check the S-Link connection. (page 10)

The TV needs to be cleaned

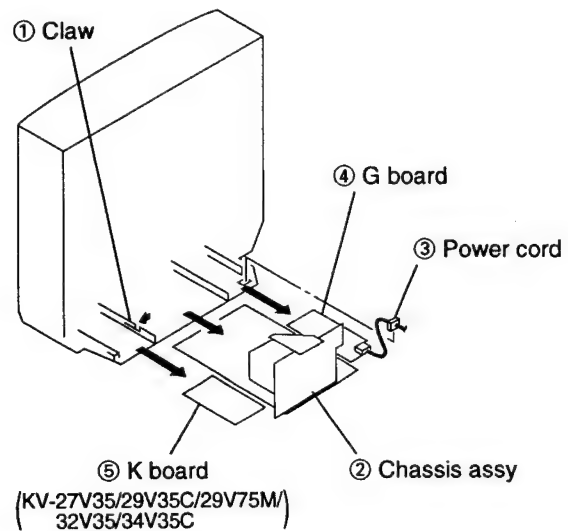
- Clean the TV with a soft dry cloth. Never use strong solvents such as thinner or benzene, which might damage the finish of the cabinet.

SECTION 2 DISASSEMBLY

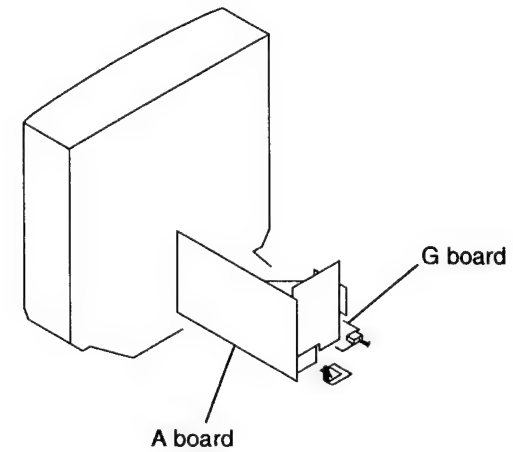
2-1. REAR COVER REMOVAL



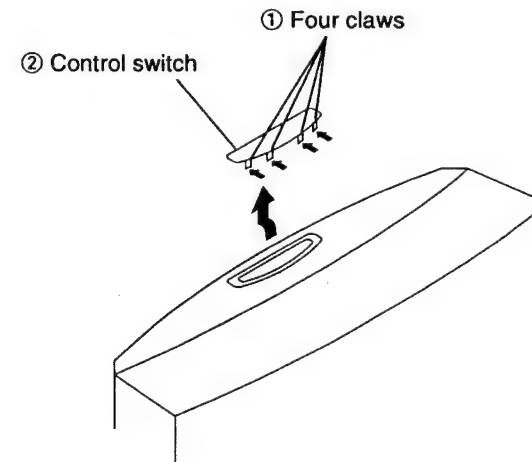
2-2. CHASSIS ASSY REMOVAL



2-3. SERVICE POSITION



2-4. CONTROL SWITCH REMOVAL (KV-27V35/29V35C/29V75M/32V35/34V35C)

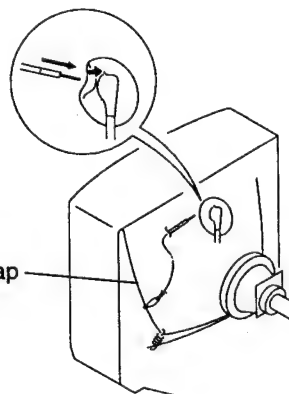


2-5. PICTURE TUBE REMOVAL

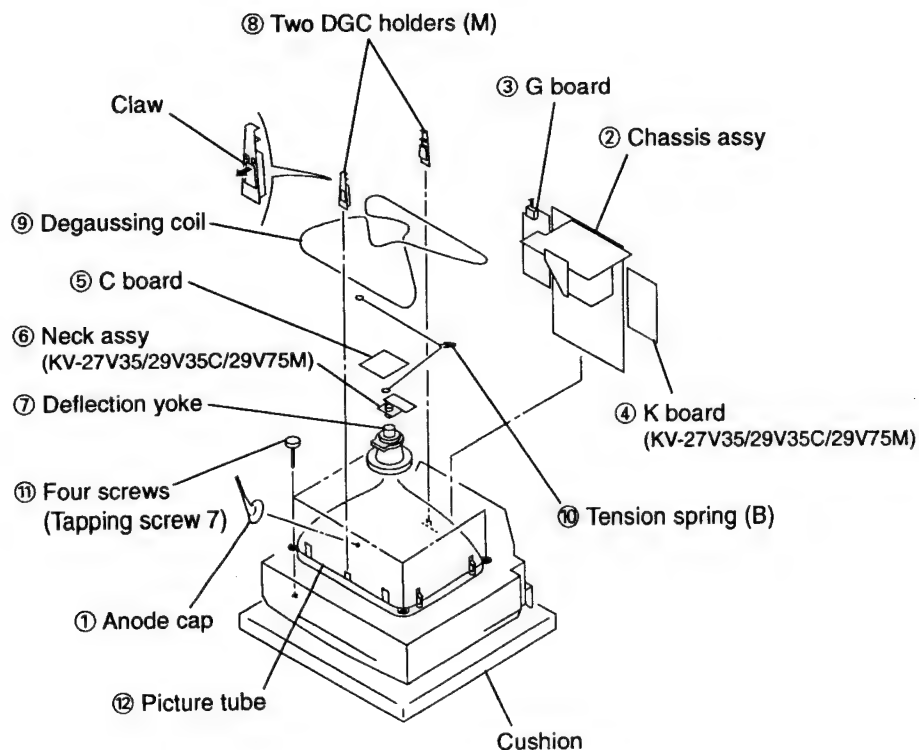
(KV-27V20/27V25/27V35/29V20M/29V35C/29V65M/29V75M)

WARNING : Before removing anode cap
H.V. remains in the CRT even after the power
is disconnected.

To avoid electrical shock before attempting
to remove the anode cap, discharge CRT:
Short between anode and CRT coated earth
ground strap.



Coated earth ground strap

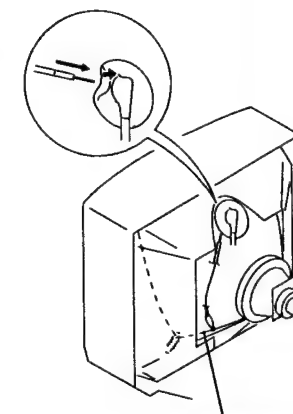


2-6. PICTURE TUBE REMOVAL

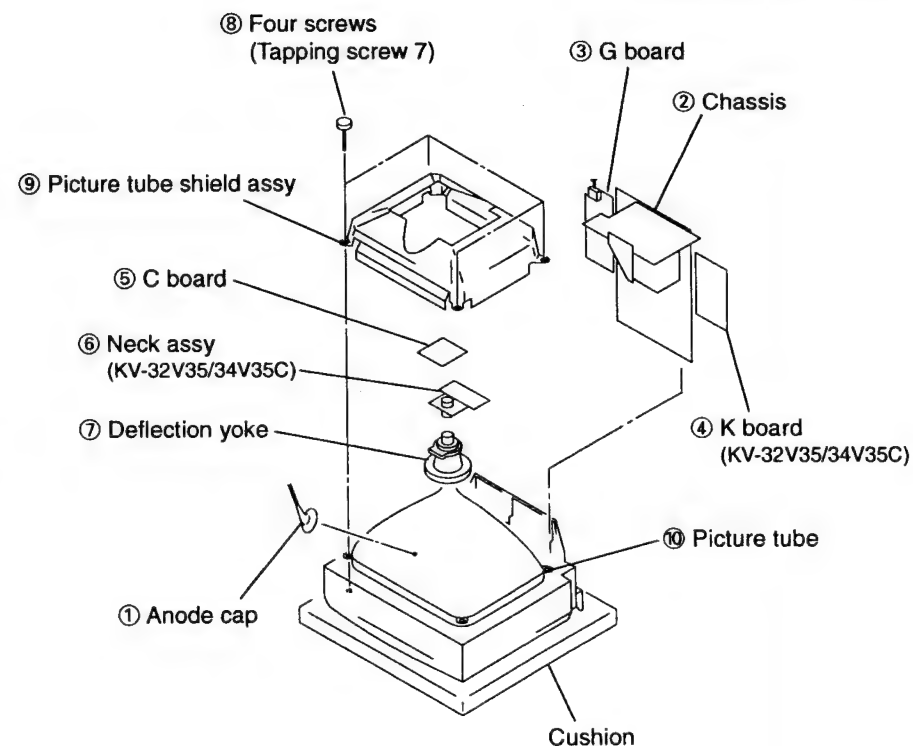
(KV-32V25/32V35/34V35C)

WARNING : Before removing anode cap
H.V. remains in the CRT even after the power
is disconnected.

To avoid electrical shock before attempting
to remove the anode cap, discharge CRT:
Short between anode and CRT coated earth
ground strap.



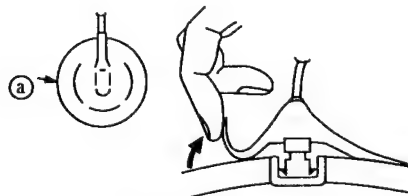
Coated earth ground strap



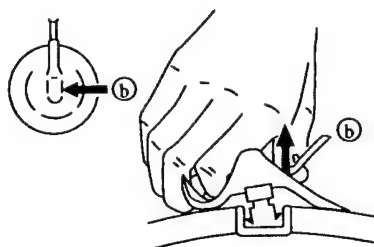
• REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

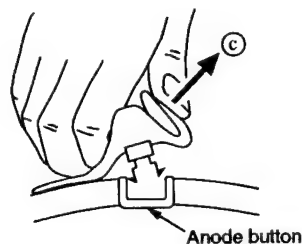
• REMOVING PROCEDURES



- ① Turn up one side of the rubber cap in the direction indicated by the arrow ①.



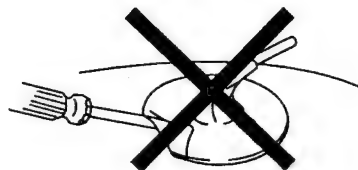
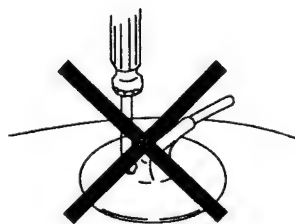
- ② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ②.



- ③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ③.

• HOW TO HANDLE AN ANODE-CAP

- ① Don't hurt the surface of anode-caps with sharp shaped material!
- ② Don't press the rubber hardly not to hurt inside of anode-caps! A material fitting called as shatter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hardly! The shatter-hook terminal will stick out or hurt the rubber.



SECTION 3

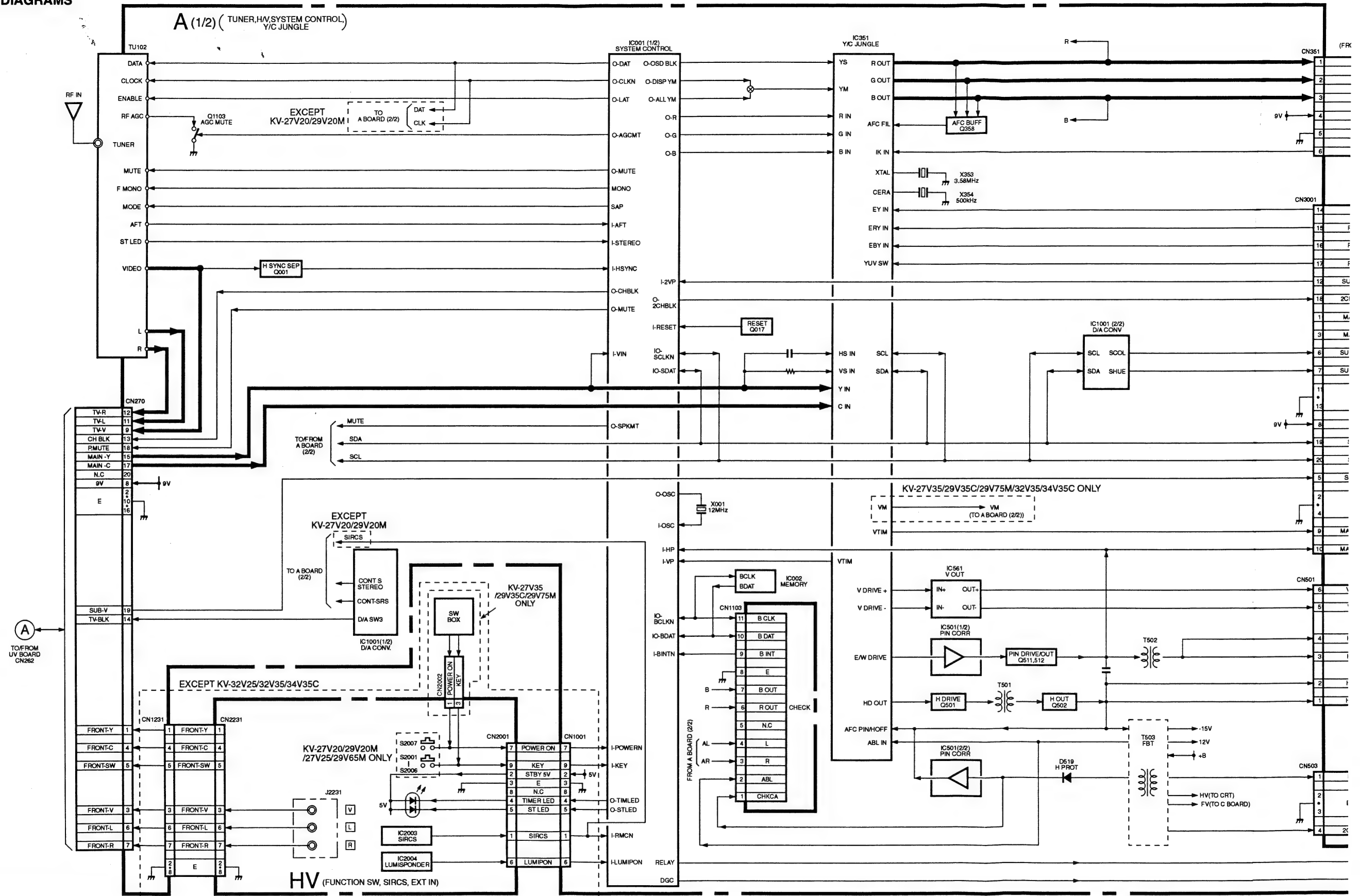
SAFETY RELATED ADJUSTMENTS

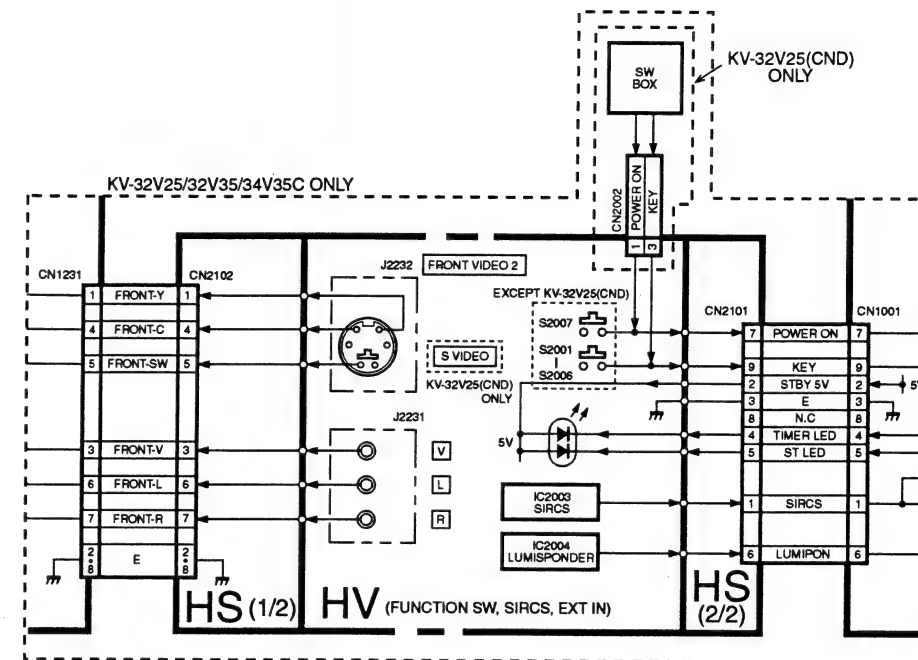
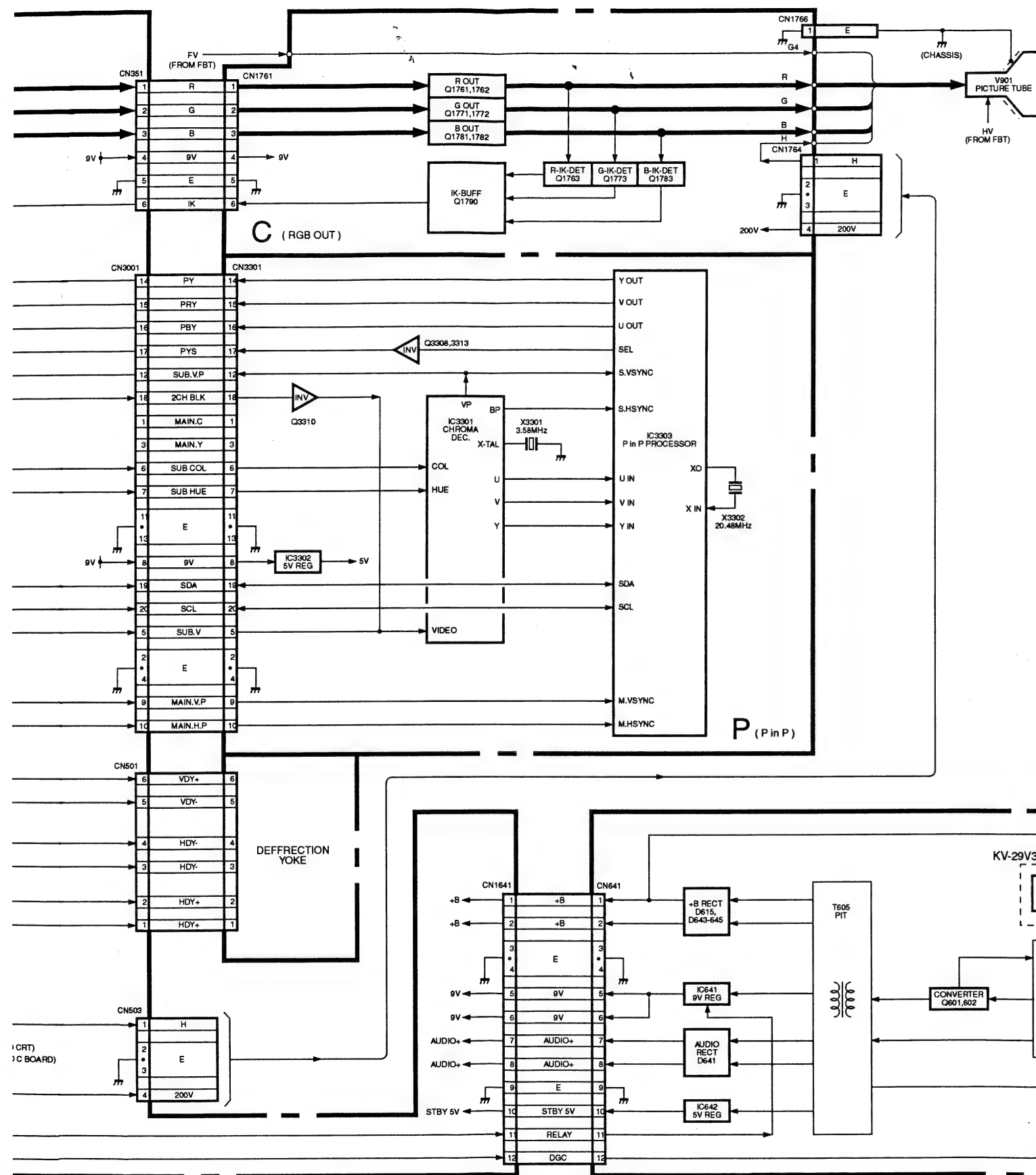
ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
<p>☑ *RESISTOR CONFIRMATION METHOD (HOLD-DOWN CONFIRMATION) AND READJUSTMENTS</p> <p>The following adjustments should always be performed when replacing the following components (*marked with ☑ on the schematic diagram). (Hold-down operation confirmation)</p> <p>Step 1</p> <p>1. Preparation before confirmation</p> <p>1) Turn the POWER switch ON, and receive *signal and set the *PICTURE and BRIGHTNESS controls to adjustment.</p> <p>2) Confirm that the voltage of the check terminal of *TP is more than *voltage when the set is operating normally with *Power supply.</p> <p>Step 2</p> <p>2. Confirm that a I ABL.</p> <p>Step 3</p> <p>4. Using an external DC power supply, apply voltage between TP 85 and ground.</p> <p>Increase gradually the voltage and confirm that the hold-down works (Raster disappears) at lower than the voltage obtained Step 2 mentioned above *voltage.</p> <p>Step 4</p> <p>5. Confirm that a voltage of more than *voltage appears TP85 and ground.</p>	<p>* White Picture</p> <p>*Digital multimeter</p> <p>* White Picture</p> <p>* White Picture</p>	<p>*☑ marked parts IC643, IC351, IC501 D519, D520, D521, C531, C532, R387, R529, R530, R531 R532, R533, R550, R661 T503</p> <p>*TP85 (H. PROT)</p> <p>* White Picture</p>	<p>*☑ R530, 531</p> <p>*PICTURE BRIGHTNESS } maximum }</p> <p>*PICTURE BRIGHTNESS maximum</p>	<p>A BOARD - CONDUCTOR SIDE -</p> <p>[Check Condition] Step 1</p> <p>*more than 18.0VDC (32/34 inch only)</p> <p>*more than 21.0VDC (27/29 inch only)</p> <p>*130 ± 2.0 VAC (Power Supply) (except 29V35C/34V35C)</p> <p>*220 ± 2.0 VAC (Power Supply) (29V35C/34V35C only)</p> <p>[Check Condition] Step 2</p> <p>*1760 ± 100 μA (27/29 inch only)</p> <p>*2160 ± 100 μA (32/34 inch only)</p> <p>*130 ± 2.0 VAC (Power Supply) (except 29V35C/34V35C)</p> <p>*220 ± 2.0 VAC (Power Supply) (29V35C/34V35C only)</p> <p>[Check Condition] Step 3</p> <p>*lower than 22.05 VDC (32/34 inch only)</p> <p>*lower than 26.05 VDC (27/29 inch only)</p> <p>*130 ± 2.0 VAC (Power Supply) (except 29V35C/34V35C)</p> <p>*220 ± 2.0 VAC (Power Supply) (29V35C/34V35C only)</p> <p>[Check Condition] Step 4</p> <p>*more than 18.0VDC (32/34 inch only)</p> <p>*more than 21.0VDC (27/29 inch only)</p> <p>*130 ± 2.0 VAC (Power Supply) (except 29V35C/34V35C)</p> <p>*220 ± 2.0 VAC (Power Supply) (29V35C/34V35C only)</p>

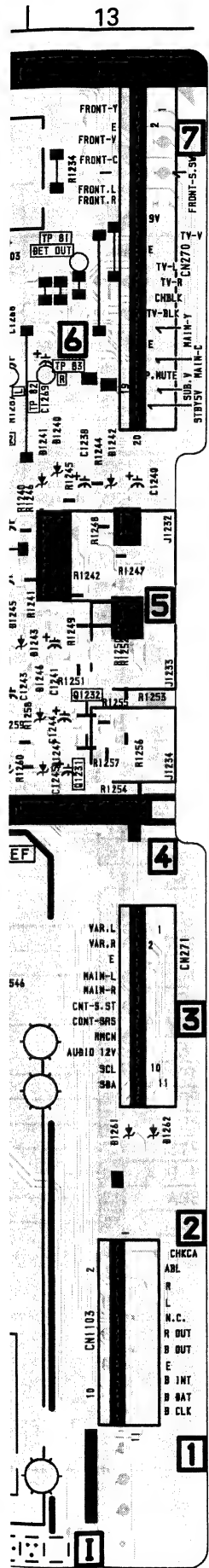
ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
<div>B+ VOLTAGE CONFIRMATION</div> <p>The following adjustments should always be performed when replacing the following *components.</p> <ol style="list-style-type: none"> 1) Supply *Voltage AC to with *variable auto-transformer. 2) Input an entirely *signal. 3) Set the PICTURE control and the BRIGHTNESS control to adjustment. 4) Confirm the voltage of *TP is less than *Voltage DC. 5) If step 4) is not satisfied, replace the *components repeat above steps. 	*Variable auto-transformer *Monoscope	*IC643, R661 *G Board CN641 Pin 1 - ground	 *PICTURE, BRIGHTNESS initial reset *R661	 *130 $\pm_{-0}^{+2.0}$ VAC (except 29V35C/34V35C) *220 $\pm_{-0}^{+2.0}$ VAC (29V35C/34V35C only) *Less than 136.5 VDC

SECTION 4 DIAGRAMS

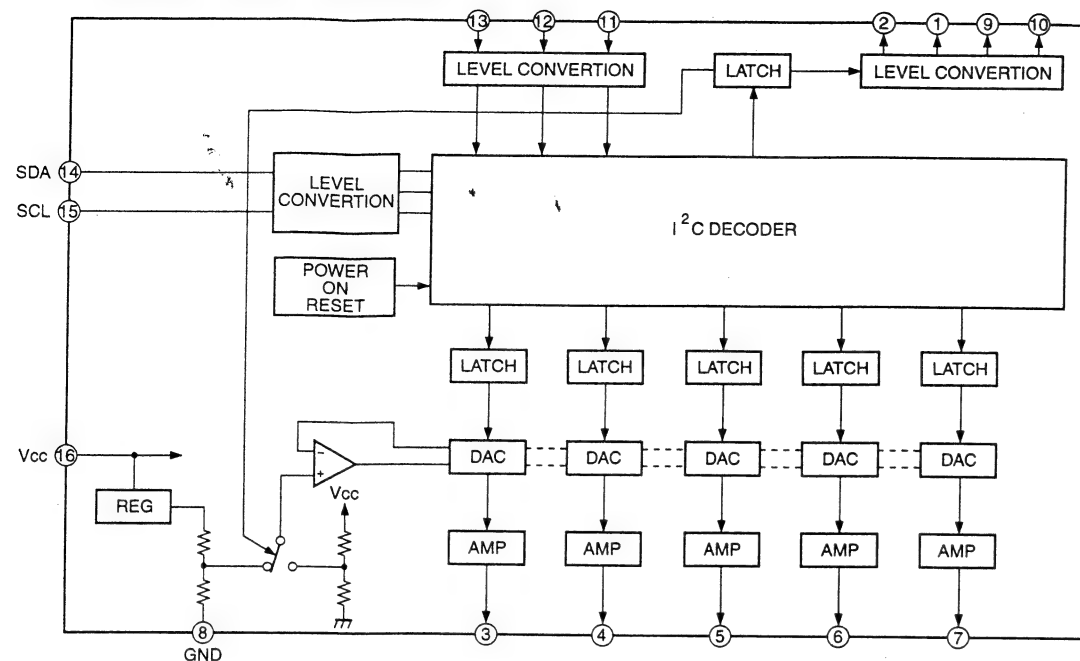
4-1. BLOCK DIAGRAMS



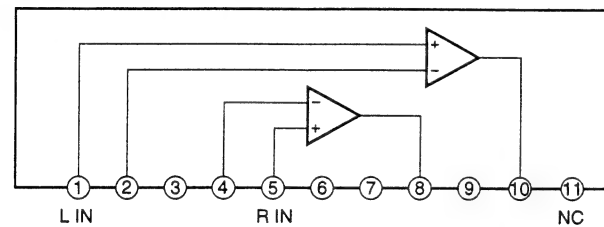




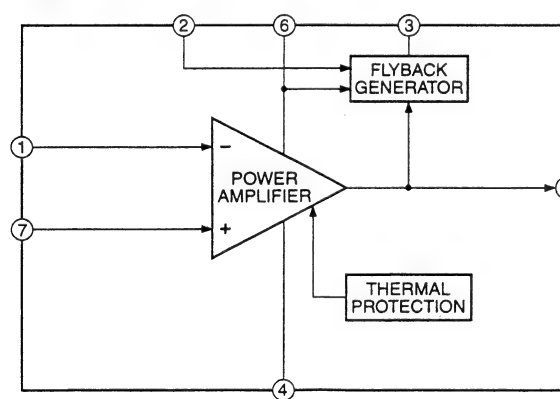
A BOARD IC1001 CXA1315M



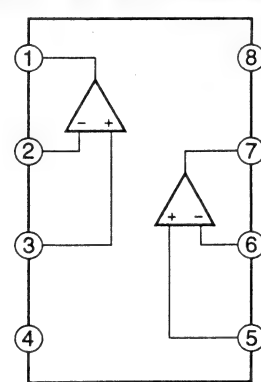
A BOARD IC461 TDA2009A



A BOARD IC561 TDA8172



A BOARD IC1402 NJM4558M



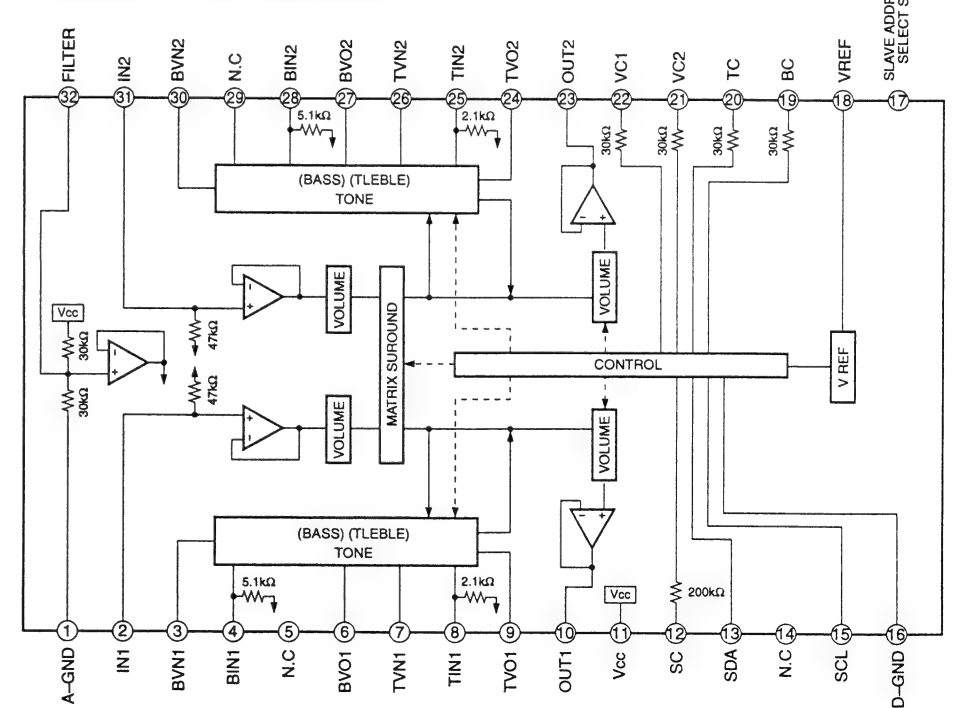
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

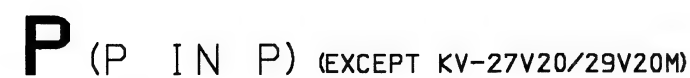
A BOARD * MARK LIST

	KV-27V20/29V20M	KV-27V25/29V65M	KV-27V35/29V35C/29V75M	KV-32V25	KV-32V35/34V35C
C360	#	0.47	0.47	0.47	0.47
C361	#	0.47	0.47	0.47	0.47
C362	#	0.47	0.47	0.47	0.47
C375	0.1 F:CHIP	#	#	#	#
C461	22 25V	22 25V	4.7	10	#
C476	1000 25V	1000 25V	JW (5)	1000 25V	JW (5)
C477	1000 25V	1000 25V	JW (5)	1000 25V	JW (5)
C520	0.0022 500V	0.0022 500V	0.0022 500V	0.001 500V	0.001 500V
C1501	#	#	#	0.12 200V :PP	0.12 200V :PP
CN461	4P WHT :S-MICRO	4P WHT :S-MICRO	7P WHT :S-MICRO	4P WHT :S-MICRO	7P WHT :S-MICRO
CN1101	#	20P :BTOB-P	20P :BTOB-P	20P :BTOB-P	20P :BTOB-P
CN1941	#	#	5P WHT :S-MICRO	#	5P WHT :S-MICRO
JR351	0 :CHIP	#	#	#	#
JR352	0 :CHIP	#	#	#	#
L461	10μH :FLR50	10μH :FLR50	18μH :FLR50	15μH :FLR50	#
Q357	#	#	2SD601A	#	2SD601A
R006	#	220	220	220	220
R008	#	220	220	220	220
R022	JW (7.5)	10k	10k	10k	10k
R027	#	1k :CHIP	1k :CHIP	1k :CHIP	1k :CHIP
R031	#	220	220	220	220
R040	#	220	220	220	220
R041	#	4.7k :CHIP	4.7k :CHIP	4.7k :CHIP	4.7k :CHIP
R042	#	4.7k :CHIP	4.7k :CHIP	4.7k :CHIP	4.7k :CHIP
R045	#	220	220	220	220
R050	#	220	220	220	220
R090	#	220 :CHIP	220 :CHIP	220 :CHIP	220 :CHIP
R358	#	220	220	220	220
R359	#	220	220	220	220
R360	#	220	220	220	220
R370	#	1k	1k	#	1k
R371	#	1.5k :CHIP	#	#	1.5k :CHIP
R386	#	1k :CHIP	1k :CHIP	1k :CHIP	1k :CHIP
R396	#	#	1k	#	1k
R466	2.2 :FPRD	2.2 :FPRD	1.5 :FPRD	2.2 :FPRD	#
R469	1.8k :CHIP	1.8k :CHIP	5.6k :CHIP	1.8k :CHIP	3.3k :CHIP
R472	1.8k :CHIP	1.8k :CHIP	5.6k :CHIP	1.8k :CHIP	3.3k :CHIP
R482	2.2k	2.2k	#	2.2k	#
R483	2.2k	2.2k	#	2.2k	#
R511	56 2W :RS	56 2W :RS	56 2W :RS	68 2W :RS	68 2W :RS
R512	82 2W :RS	82 2W :RS	82 2W :RS	100 2W :RS	100 2W :RS
R513	0.68 1W :RS	0.68 1W :RS	0.68 1W :RS	0.22 1W :RS	0.22 1W :RS
R530	20k :RN-CP	20k :RN-CP	20k :RN-CP	12k :RN-CP	12k :RN-CP
R531	24k :RN-CP	24k :RN-CP	24k :RN-CP	68k :RN-CP	68k :RN-CP
R546	30k :RN	30k :RN	30k :RN	22k :RN	22k :RN
R564	8.2	8.2	8.2	10	10

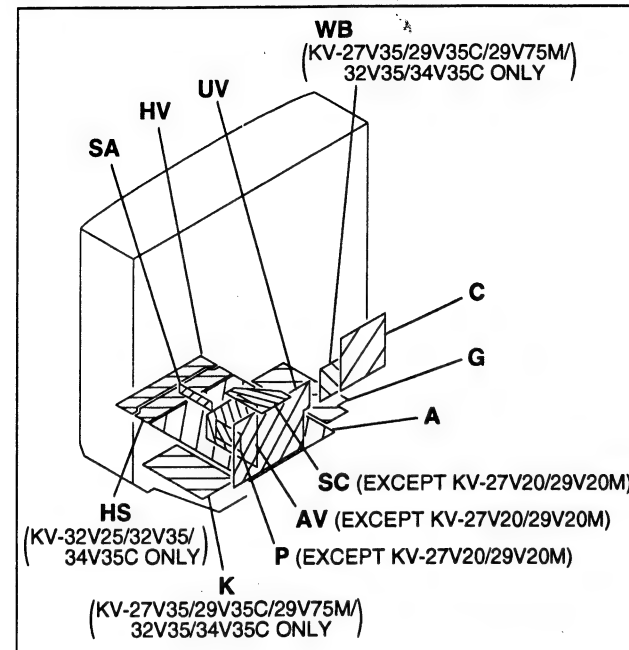
Mark : not mounted

A BOARD IC1401 BH3856FS





4-2. CIRCUIT BOARDS LOCATION



4-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All electrolytics are in 50V unless otherwise specified.
- All resistors are in ohms.
- $\text{k}\Omega = 1000\Omega$, $\text{M}\Omega = 1000\text{k}\Omega$
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm
Rating electrical power: 1/4W

- 1/4W in resistance, 1/10W and 1/8W in chip resistance.
- : nonflammable resistor.
- : fusible resistor.
- : internal component.
- : panel designation and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by , make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by and repeat the adjustment until the specified value is achieved. (Refer to R530 and R531 adjustment on Page 25, 26.)
- When replacing the part in below table, be sure to perform the related adjustment.

Part replaced ()	Adjustment ()
IC351, IC501, D519, D520, D521, C531, C532, R387, R529, R530, R531, R532, R533, R550, T503 A BOARD IC643, R661 G BOARD	R530, R531

- As to the voltage value shown by the semiconductors on the Schematic Diagram, see the another list.
- Readings are taken with a color-bar signal input.
- Readings are taken with a 10M Ω digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- S : Measurement impossibility.
- : B + line.
- : B - line.
- (Actual measured value may be different).
- : signal path. (RF)
- Circled numbers are waveform reference.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFRAMMABLE CARBON
	: FUSE	NONFRAMMABLE FUSIBLE
	: RW	NONFRAMMABLE WIREWOUND
	: RS	NONFRAMMABLE METAL OXIDE
	: RB	NONFRAMMABLE CEMENT
	: *	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The symbol display is on the component side.

The components identified by shading and mark are critical for safety. Replace only with part number specified.

The symbol indicate fast operating fuse. Replace only with fuse of same rating as marked.

Note: Les composants identifiés par un tramé et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Le symbole indique une fusible a action rapide. Doit être remplacée par une fusible de même valeur, comme maque.

P BOARD IC VOLTAGE LIST

IC	pin	volt	pin	volt
IC3301	1	GND	4	2.3
	2	NC	5	5.1
	3	GND	6	GND
	4	4.0	7	0.5
	5	6.8	8	0
	6	GND	9	0.6
	7	0.2	10	5.2
	8	0	11	2.1
	9	1.8	12	0.3
	10	0.3	13	NC
	11	8.2	14	-3.0
	12	8.2	15	GND
	13	3.9	16	GND
	14	3.4	17	0.7
	15	0	18	0.5
	16	2.8	19	0.2
	17	NC	20	0.3
	18	2.5	21	5.1
	19	3.5	22	5.2
	20	3.0	23	NC
	21	3.0	24	NC
	22	4.7	25	GND
	23	GND	26	NC
	24	2.9	27	GND
IC3302	IN	9.1	28	2.3
	OUT	5.3	29	5.2
IC3303	1	GND	30	2.6
	2	3.2	31	4.2
	3	2.6	32	2.5

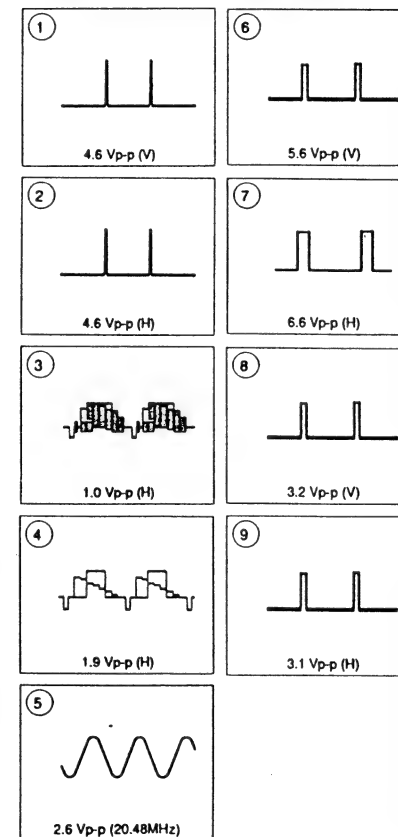
All voltages are in V

P BOARD TRANSISTOR VOLTAGE LIST

	B	C	E
Q3301	5.3	9.1	4.7
Q3305	0.5	GND	1.2
Q3306	0.8	GND	1.4
Q3307	0.6	GND	1.3
Q3308	0	GND	2.8
Q3310	0	5.2	GND
Q3312	0	0	0.8
Q3313	0.8	0.4	GND

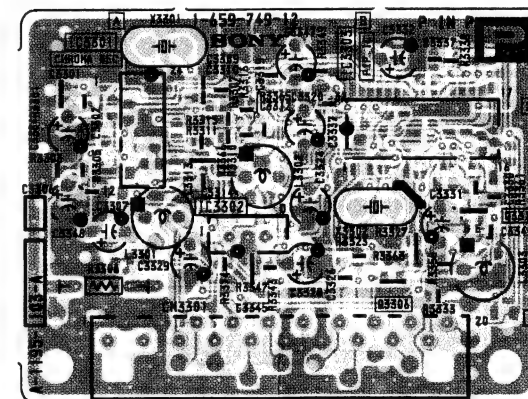
All voltages are in V

• P BOARD WAVEFORMS

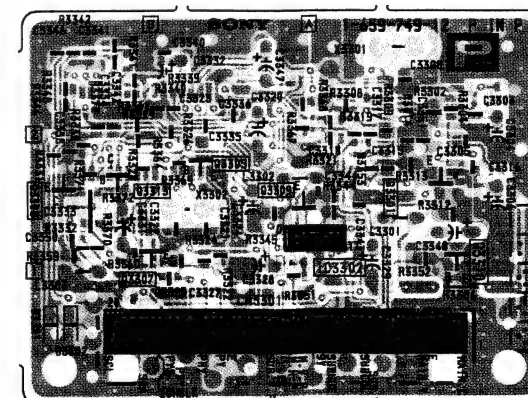


P [P IN P] (EXCEPT KV-27V20/29V20M)

- P BOARD - <Component Side>



<Conductor Side>



- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

1 2 (EXCE

A

B

C

D

E

F

G

H

I

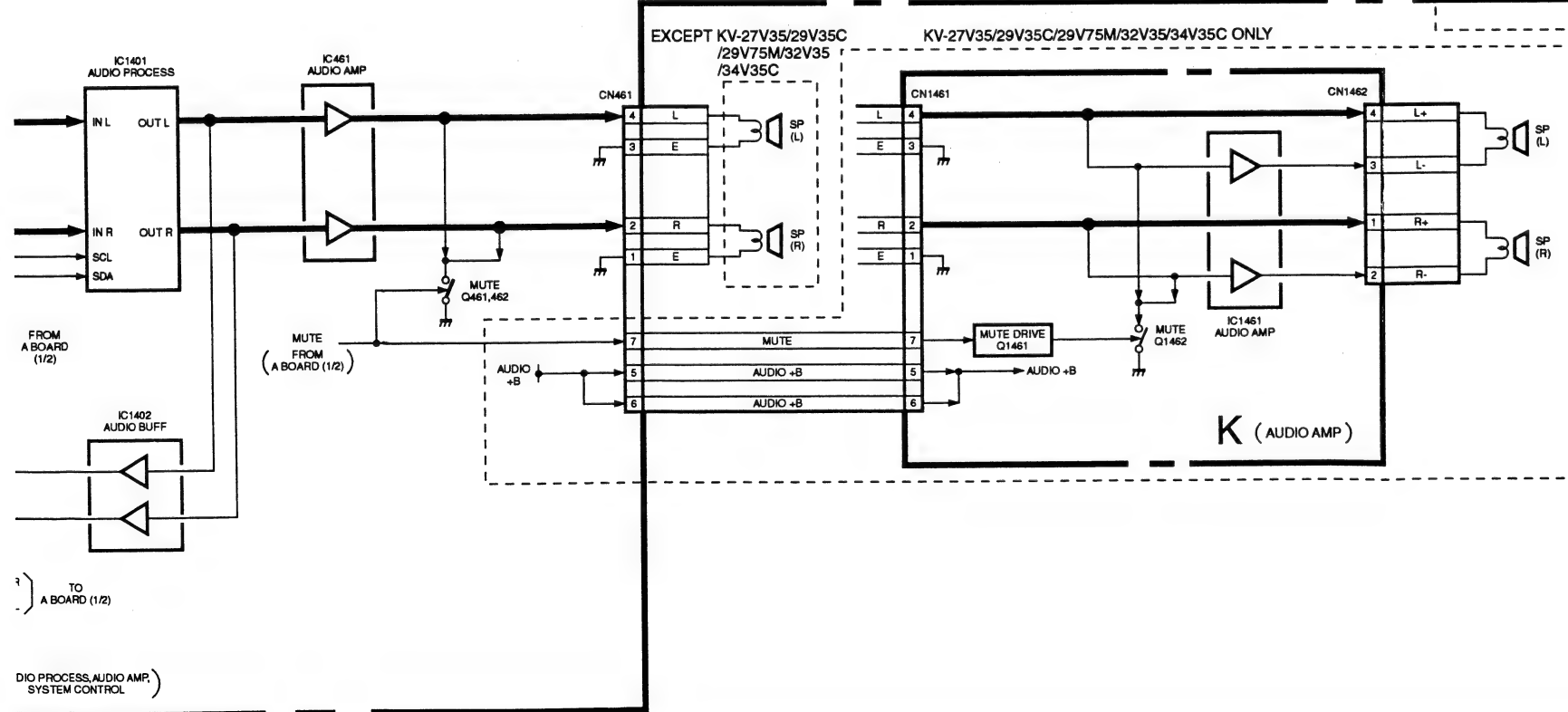
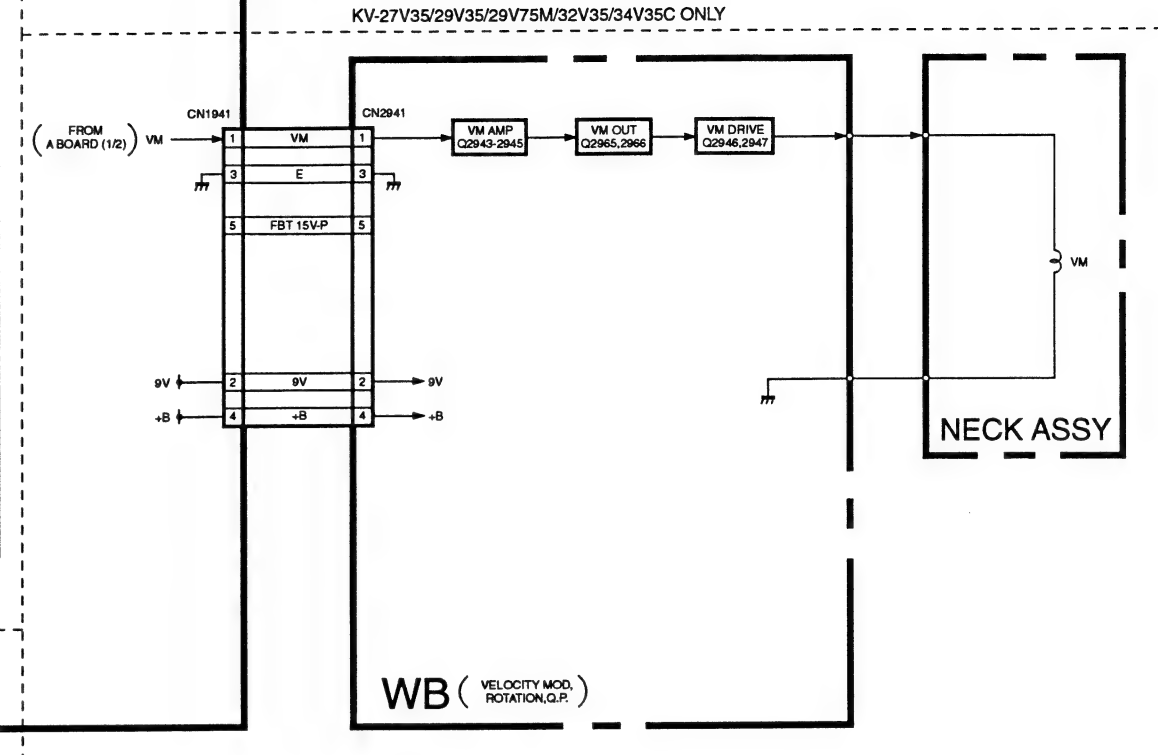
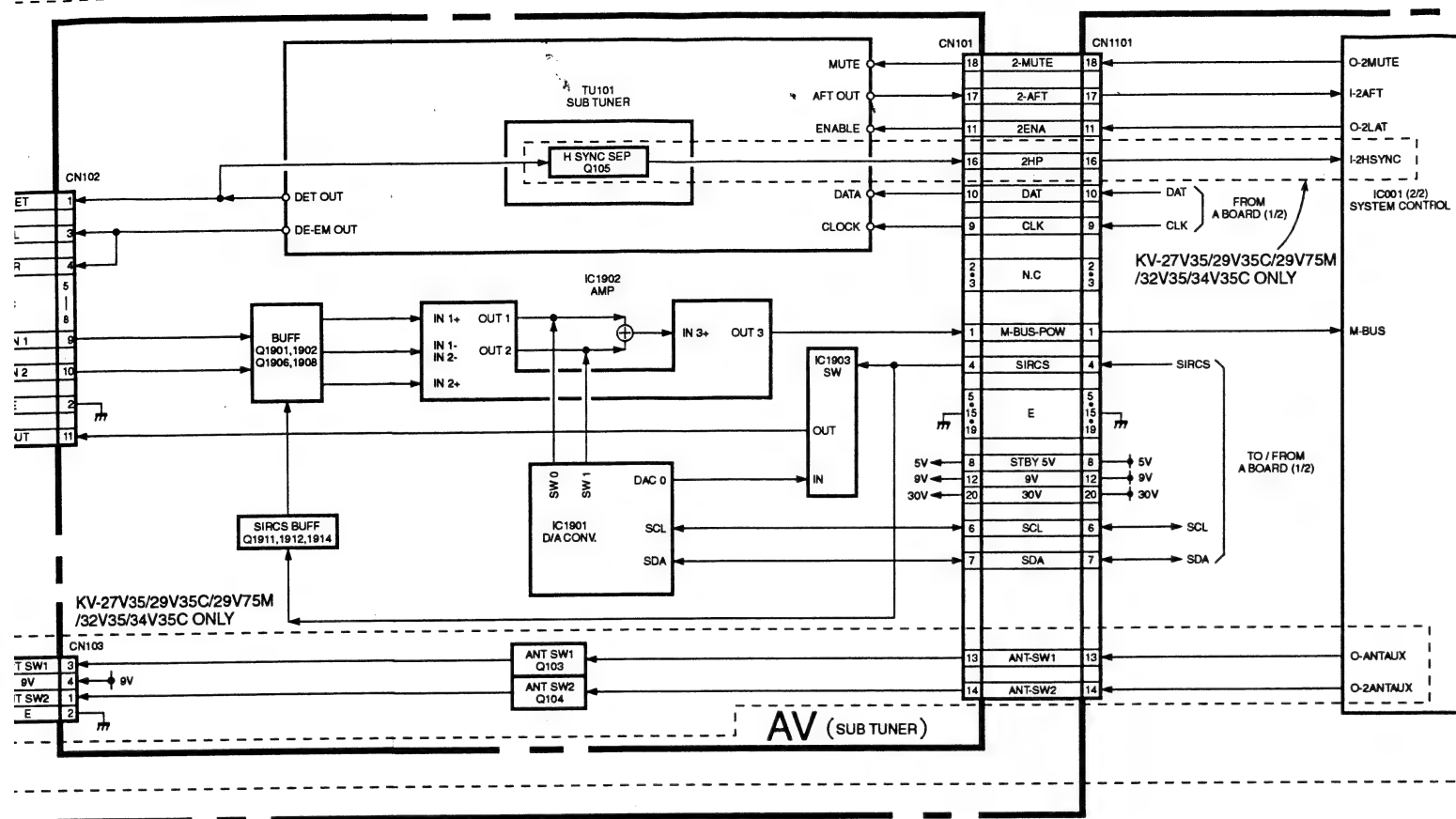
J

CN3301
20P
:BT0B-S
TO A BOARD
CN3001

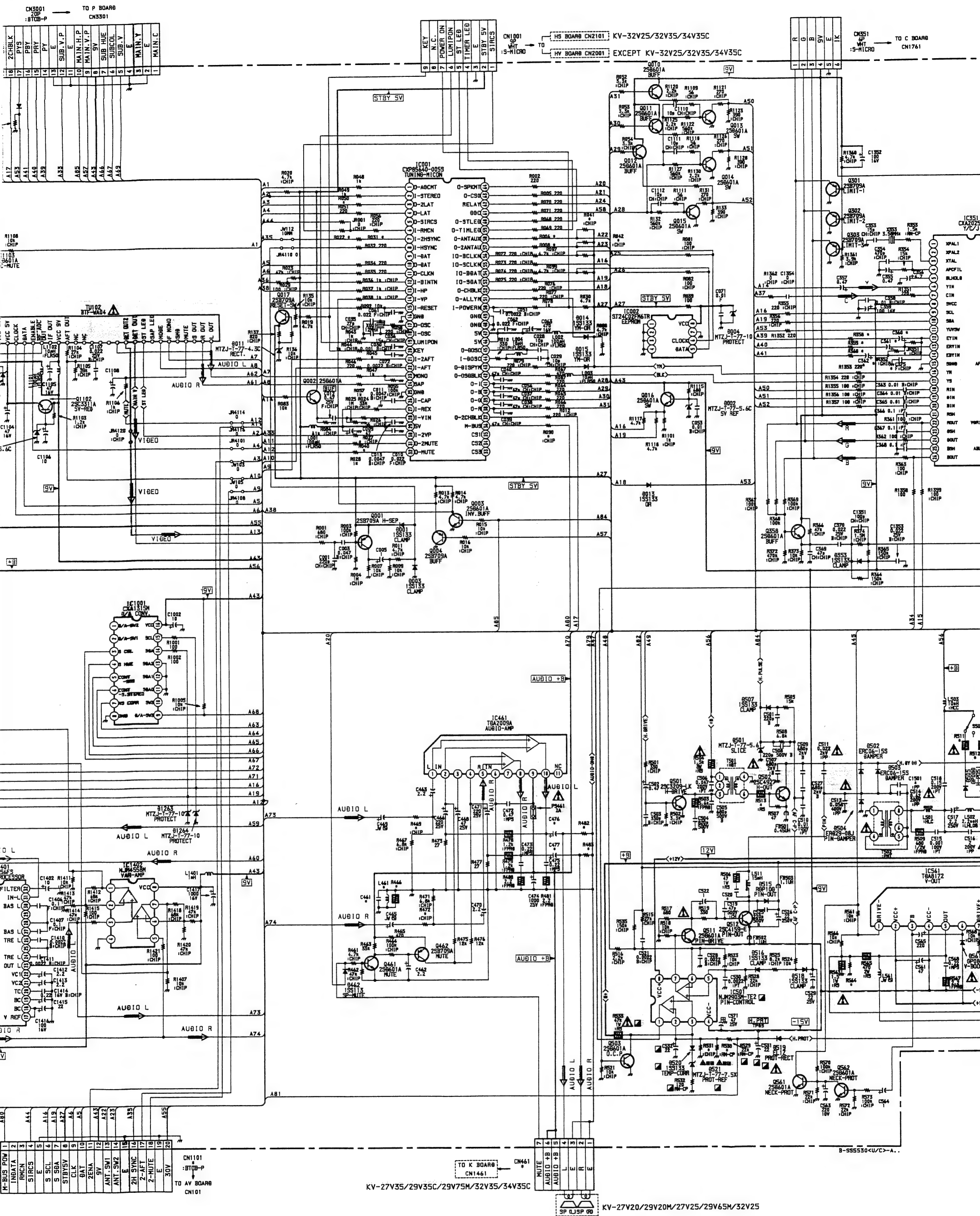
MAIN.C	1
E	2
MAIN.Y	3
E	4
SUB.V	5
SVBCOL	6
SUB-HUE	7
9V	8
MAIN.V.P	9
MAIN.H.P	10
E	11
SUB.V.P	12
E	13
PY	14
PRY	15
PBY	16
PYS	17
2CH BLK	18
SBA	19
SCL	20

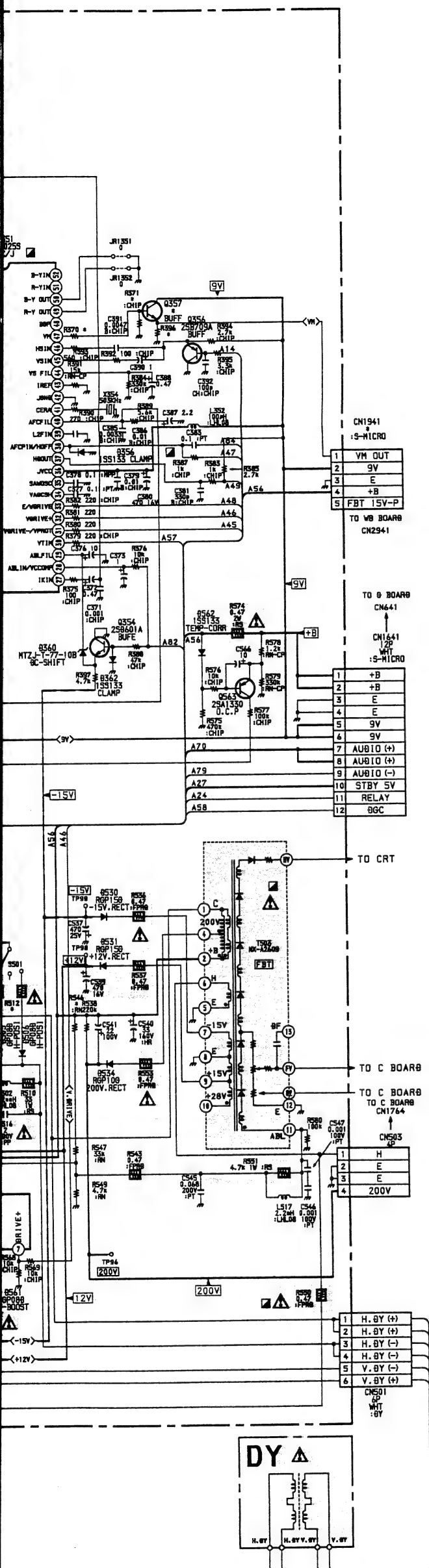
F

EXCEPT KV-27V20/29V20M









A BOARD IC VOLTAGE LIST

	pin	volt		pin	volt		pin	volt		pin	volt
IC001	1	0		52	0		31	3.1		6	0.6
	2	0		53	4.9		32	3.2		7	3.8
	3	0		54	4.9		33	3.7		8	GND
	4	0		55	4.9		34	4.5		9	0
	5	0		56	5.0		35	4.8		10	0
	6	5.0		57	5.0		36	8.7		11	GND
	7	0		58	0		37	3.4		12	GND
	8	0		59	3.7		38	3.6		13	GND
	9	0.8		60	0.5		39	4.1		14	5.0
	10	0		61	0		40	4.3		15	5.0
	11	0		62	4.8		41	2.5		16	8.7
	12	5.0		63	0		42	GND	IC1401	1	GND
	13	4.2		64	4.6		43	2.8			2
	14	1.3	IC002	1	GND		44	2.8		3	4.3
	15	5.0		2	GND		45	4.1		4	4.3
	16	GND		3	GND		46	3.3		5	0
	17	2.6		4	GND		47	6.0		6	4.3
	18	*		5	5.0		48	0.4		7	4.3
	19	3.1		6	5.0		49	0		8	4.4
	20	5.0		7	GND		50	0		9	4.4
	21	2.0		8	5.0	IC461	1	1.5		10	4.4
	22	2.0	IC351	1	NC		2	3.5		11	8.7
	23	0		2	NC	3	12.2		12	3.8	
	24	0		3	2.2	4	3.5		13	4.9	
	25	GND		4	5.9	5	1.5		14	0	
	26	0		5	4.1	6	0		15	5.0	
	27	1.6		6	4.6	7	0		16	0	
	28	2.4		7	4.3	8	0.3		17	4.0	
	29	5.0		8	9.2	9	22.1		18	4.0	
	30	0.2		9	5.2	10	0.3		19	2.0	
	31	0		10	5.2	11	0		20	2.0	
	32	0		11	0.3	IC501	1	3.4		21	0
	33	0		12	6.6		2	7.9		22	0
	34	0		13	6.3	3	8.3		23	4.3	
	35	0		14	6.3	4	-16.5		24	4.3	
36	0		15	GND	5	2.3		25	4.3		
37	0		16	0	6	2.8		26	4.3		
38	0		17	0	7	-16.3		27	4.3		
39	0		18	5.2	8	12.6		28	4.3		
40	0		19	5.2	IC561	1	1.6		29	0	
41	0		20	5.2		2	12.6		30	4.3	
42	0		21	4.0	3	-14.5		31	4.3		
43	0		22	2.2	4	-16.6		32	5.6		
44	3.0		23	5.1	5	0	IC1402	1	4.2		
45	3.0		24	1.8	6	13.4			2	4.3	
46	5.0		25	4.5	7	1.6		3	4.3		
47	5.0		26	2.3	IC1001	1	0		4	GND	
48	GND		27	4.7		2	0		5	4.3	
49	GND		28	1.7	3	3.2		6	4.3		
50	5.0		29	6.8	4	2.8		7	4.3		
51	0		30	0.7	5	0.5		8	8.7		

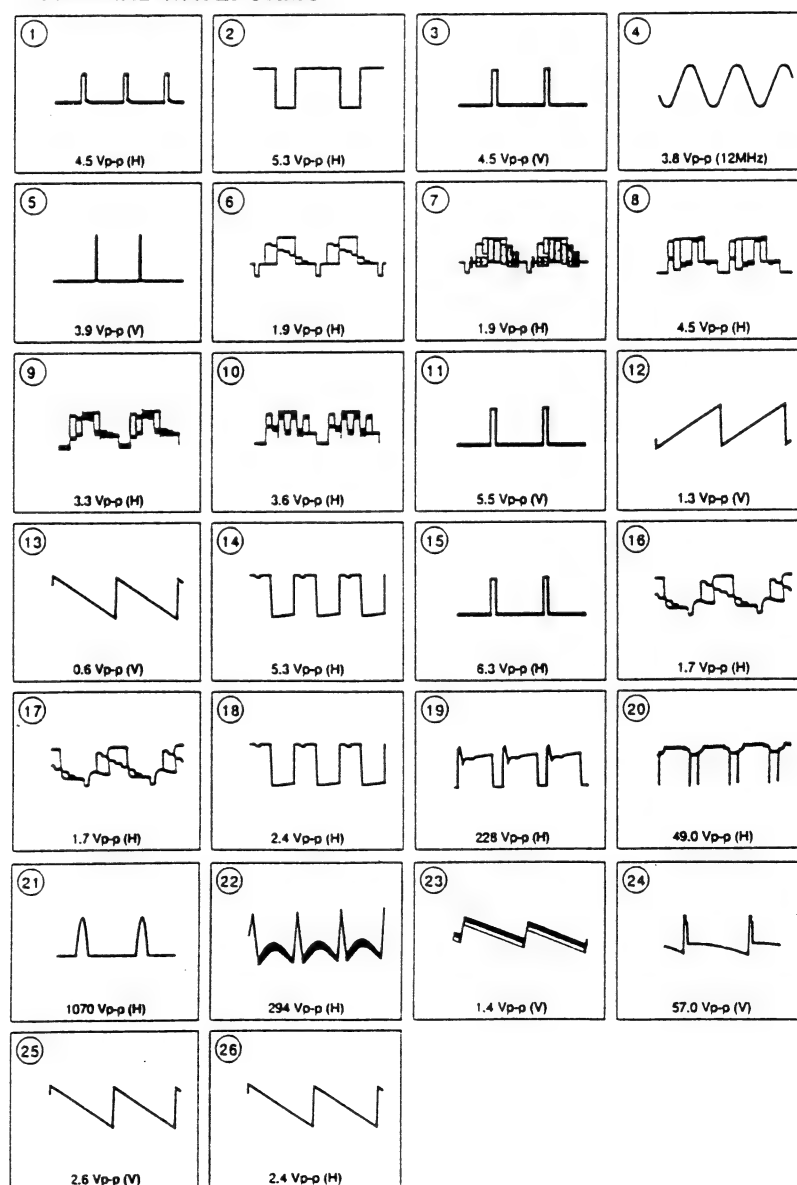
All voltages are in V
*: Can not measured

A BOARD TRANSISTOR VOLTAGE LIST

	B	C	E
Q001	5.2	0.9	5.0
Q002	4.8	5.0	4.1
Q003	-0.4	4.2	GND
Q004	0.8	GND	1.3
Q010	0	8.7	0
Q011	0	8.7	0
Q012	0	8.7	0
Q013	-0.2	0	GND
Q014	-0.2	0	GND
Q015	-0.2	0	GND
Q016	5.8	8.7	5.1
Q017	4.4	5.0	5.0
Q301	4.0	GND	2.2
Q302	4.0	GND	1.8
Q303	4.0	GND	2.0
Q354	0.2	GND	-0.5
Q356	4.9	GND	5.6
Q357	3.6	8.7	0
Q358	1.9	8.7	2.0
Q461	0.8	0	0
Q462	20.0	20.6	20.7
Q501	-0.7	105.6	GND
Q502	-0.4	136.1	0
Q503	0	8.3	GND
Q511	-16.3	-13.0	-16.5
Q512	-16.9	-19.1	-16.0
Q563	134.3	0.4	134.9
Q1102	6.0	9.2	5.3
Q1103	0	2.5	GND
Q1231	0	0	GND
Q1232	0	0	GND

All voltages are in V

• A BOARD WAVEFORMS



UV BOARD * MARK LIST

	KV-27V20/29V20M	KV-27V25/29V65M	KV-32V25	KV-27V35/29V35C/29V75M	KV-32V35/34V35C
C238	#	0.047 .MPS	0.047 .MPS	0.047 .MPS	0.047 .MPS
C237	#	1	1	1	1
C238	#	1	1	1	1
C245	#	#	#	470 25V	470 25V
C246	#	#	#	0.47	0.47
C247	#	#	#	0.47	0.47
C261	#	#	#	0.047 .MPS	0.047 .MPS
C264	100 16V	100 16V	100 16V	470 25V	470 25V
C265	47 16V .BP	47 16V .BP	47 25V	47 16V .BP	47 25V
C266	#	#	#	1	1
C267	#	#	#	1	1
C301	100 16V	100 16V	100 16V	470 16V	470 16V
CM301	1-473-548- 11	1-473-548- 11	1-467-554- 21	1-473-548- 11	1-467-554- 11
CM302	#	#	#	#	#
CM281	#	11P .BYOB-S	11P .BYOB-S	11P .BYOB-S	11P .BYOB-S
D239	#	#	#	MTZJ-1-77-3.3	MTZJ-1-77-3.3
D240	#	MTZJ-1-77-10B	MTZJ-1-77-10B	MTZJ-1-77-10B	MTZJ-1-77-10B
D241	#	MTZJ-1-77-10B	MTZJ-1-77-10B	MTZJ-1-77-10B	MTZJ-1-77-10B
D242	#	MTZJ-1-77-10B	MTZJ-1-77-10B	MTZJ-1-77-10B	MTZJ-1-77-10B
D245	#	#	#	MTZJ-1-77-3.3	MTZJ-1-77-3.3
D246	#	#	#	MTZJ-1-77-3.3	MTZJ-1-77-3.3
D302	#	MTZJ-1-77-6.2	MTZJ-1-77-6.2	MTZJ-1-77-6.2	MTZJ-1-77-6.2
D303	#	MTZJ-1-77-6.2	MTZJ-1-77-6.2	MTZJ-1-77-6.2	MTZJ-1-77-6.2
D310	#	MTZJ-1-77-6.2	MTZJ-1-77-6.2	MTZJ-1-77-6.2	MTZJ-1-77-6.2
IC261	MM1311AD	MM1313AD	MM1313AD	MM1313AD	MM1313AD
J232	#	1-750-517- 11 3P	1-750-517- 11 3P	1-750-517- 11 3P	1-750-517- 11 3P
J235	#	#	#	1-750-517- 11 3P	1-750-517- 11 3P
J902	#	SIRCS JACK	SIRCS JACK	SIRCS JACK	SIRCS JACK
J903	#	SIRCS JACK	SIRCS JACK	SIRCS JACK	SIRCS JACK
J904	#	SIRCS JACK	SIRCS JACK	SIRCS JACK	SIRCS JACK
JR233	0 .CHIP	#	#	#	#
JR261	0 .CHIP	#	#	#	#
JR262	0 .CHIP	#	#	#	#
JW226	7.5MM	7.5MM	7.5MM	4.7	4.7
Q232	#	#	#	2SD601A	2SD601A
Q235	#	#	#	2SD601A	2SD601A
Q236	#	#	#	2SD601A	2SD601A
Q240	#	#	#	2SB709A	2SB709A
Q241	#	#	#	2SB709A	2SB709A
Q242	#	#	#	2SB709A	2SB709A
Q261	#	#	#	2SD601A	2SD601A
R206	#	#	#	1k .CHIP	1k .CHIP
R207	#	#	#	0 .CHIP	0 .CHIP
R208	#	#	#	1k .CHIP	1k .CHIP
R209	#	#	#	6.8k .CHIP	6.8k .CHIP
R210	#	#	#	6.8k .CHIP	6.8k .CHIP
R219	#	#	#	4.7k .CHIP	4.7k .CHIP
R220	#	#	#	4.7k .CHIP	4.7k .CHIP
R221	#	#	#	470	470
R222	#	#	#	100 .CHIP	100 .CHIP
R223	#	#	#	100 .CHIP	100 .CHIP
R224	#	#	#	100 .CHIP	100 .CHIP
R239	#	75 .CHIP	75 .CHIP	75 .CHIP	75 .CHIP
R240	#	470k .CHIP	470k .CHIP	470k .CHIP	470k .CHIP
R241	#	4.7k .CHIP	4.7k .CHIP	4.7k .CHIP	4.7k .CHIP
R242	#	470k .CHIP	470k .CHIP	470k .CHIP	470k .CHIP
R243	#	4.7k .CHIP	4.7k .CHIP	4.7k .CHIP	4.7k .CHIP
R253	#	#	#	56 .CHIP	56 .CHIP
R254	#	#	#	470k .CHIP	470k .CHIP
R255	#	#	#	470k .CHIP	470k .CHIP
R258	#	#	#	6.8k .CHIP	6.8k .CHIP
R261	#	22 .CHIP	22 .CHIP	22 .CHIP	22 .CHIP
R266	#	#	#	560 .CHIP	560 .CHIP
R267	#	#	#	680 .CHIP	680 .CHIP
R275	#	#	#	4.7k	4.7k
R276	#	#	#	4.7k	4.7k
R278	#	#	#	470	470
R281	#	220 .CHIP	220 .CHIP	220 .CHIP	220 .CHIP
R291	#	100 .CHIP	100 .CHIP	100 .CHIP	100 .CHIP
R292	100 .CHIP	#	#	#	#
R293	#	100 .CHIP	100 .CHIP	100 .CHIP	100 .CHIP
R902	#	100 .FPRD	100 .FPRD	100 .FPRD	100 .FPRD
R919	#	0 .CHIP	0 .CHIP	0 .CHIP	0 .CHIP
R920	#	100 .FPRD	100 .FPRD	100 .FPRD	100 .FPRD
R921	#	100 .FPRD	100 .FPRD	100 .FPRD	100 .FPRD
R922	#	1k .CHIP	1k .CHIP	1k .CHIP	1k .CHIP
R923	#	1k .CHIP	1k .CHIP	1k .CHIP	1k .CHIP
R924	#	1k .CHIP	1k .CHIP	1k .CHIP	1k .CHIP

Mark : not mounted

UV BOARD TRANSISTOR VOLTAGE LIST

	B	C	E
Q231	0	5.7	GND
Q232	0.2	4.9	GND
Q233	0	0	GND
Q234	0	0	GND
Q235	0	0	GND
Q236	0	0	GND
Q237	5.0	GND	5.7
Q238	4.1	GND	4.7
Q239	4.1	GND	4.7
Q240	4.4	GND	5.0
Q241	4.4	GND	5.0
Q242	4.3	GND	4.9
Q243	0.2	GND	0.9
Q261	4.6	8.7	4.0
Q262	4.9	5.7	4.2
Q263	3.4	GND	4.1
Q265	4.3	GND	4.9

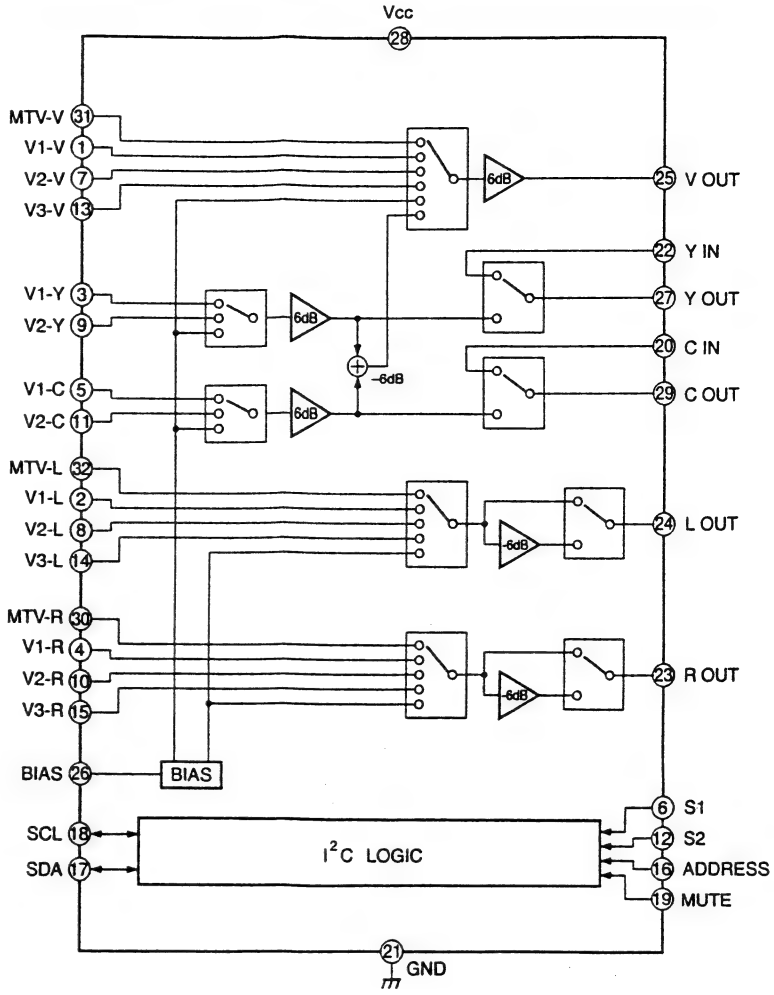
All voltages are in V

UV BOARD IC VOLTAGE LIST

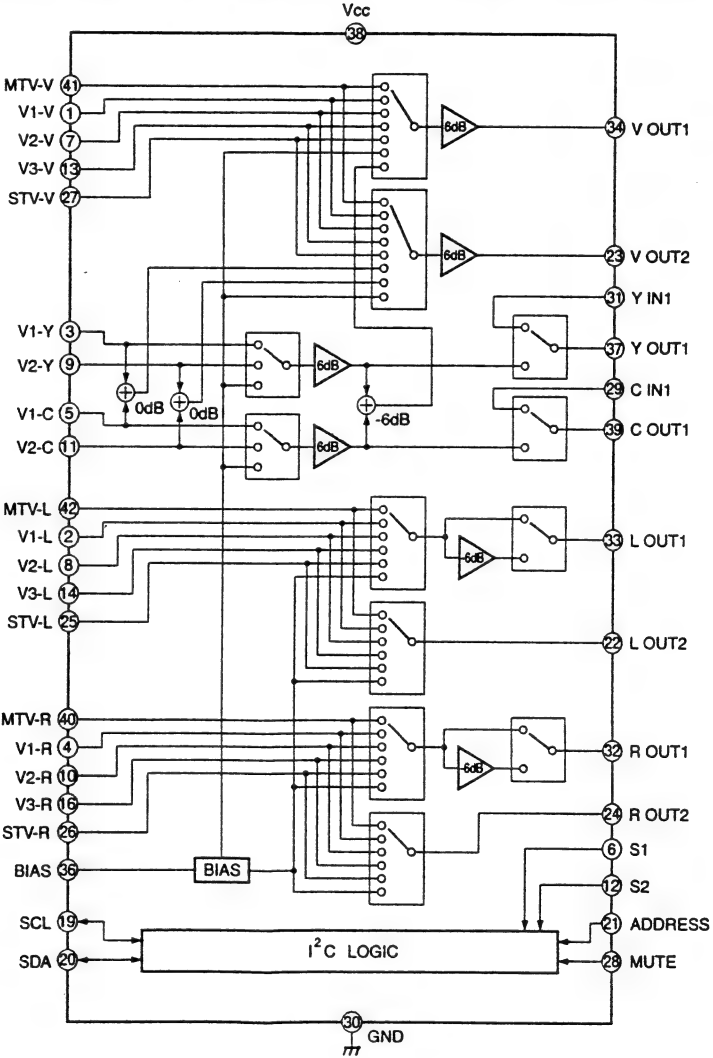
	pin	volt	pin	volt
IC151	1	4.4	12	4.4
	2	4.4	13	4.4
	3	4.4	14	4.4
	4	8.7	15	4.4
	5	4.4	16	8.7
	6	4.4	1	4.8
	7	4.4	2	4.2
	8	4.4	3	4.8
	9	4.4	4	4.2
	10	4.4	5	4.8
	11	GND	6	4.5
	12	4.4	7	4.8
	13	4.4	8	4.2
	14	4.4	9	4.8
IC152	1	4.4	10	4.2
	2	4.4	11	4.9
	3	4.4	12	5.8
	4	8.7	13	4.8
	5	4.4	14	4.2
	6	4.4	15	0
	7	4.4	16	4.2
	8	4.4	17	5.8
	9	4.4	18	NC
	10	4.4	19	5.0
IC153	1	4.4	20	4.9
	2	4.4	21	GND
	3	4.4	22	NC
	4	GND	23	6.7
	5	4.4	24	NC
	6	4.4	25	4.2
	7	4.4	26	4.2
	8	8.7	27	6.1
	9	4.4	28	NC
	10	4.4	29	4.8
IC154	1	4.4	30	GND
	2	4.4	31	5.6
	3	4.4	32	4.1
	4	4.4	33	4.1
	5	4.4	34	5.0
	6	GND	35	NC
	7	GND	36	4.2
	8	GND	37	4.3
	9	0.5	38	8.7
	10	0.5	39	3.4
	11	4.4	40	4.2
			41	5.2
			42	4.2

All voltages are in V

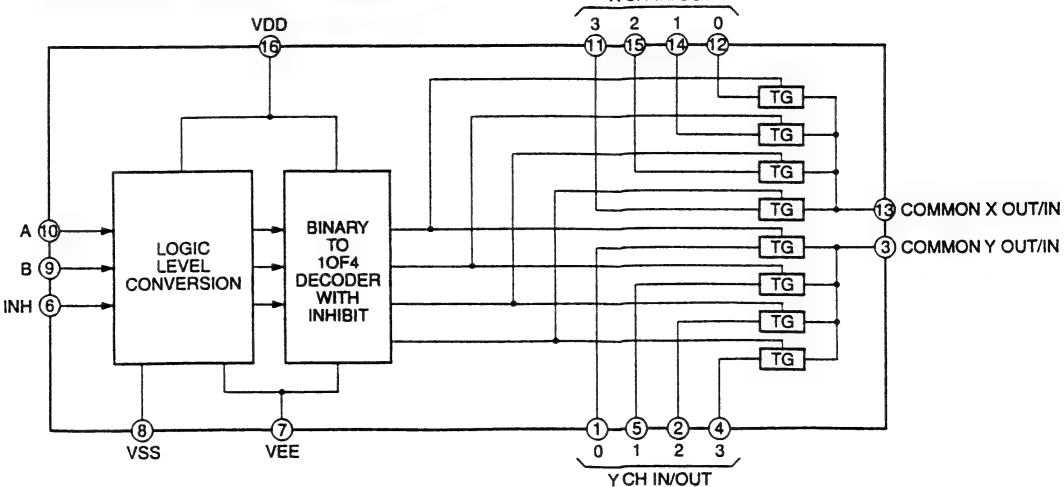
UV BOARD IC261 MM1311AD (KV-27V20/29V20M ONLY)



UV BOARD IC261 MM1313AD (EXCEPT KV-27V20/29V20M)



UV BOARD IC154 CD4052BCN



Schematic diagram

← A board

Schematic diagram

UV board →

A

B

C

D

E

F

G

H

I

J

K

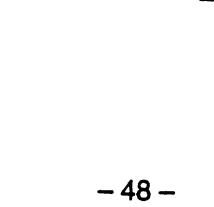
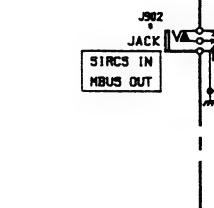
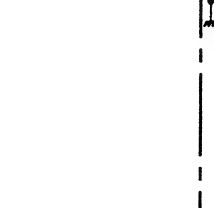
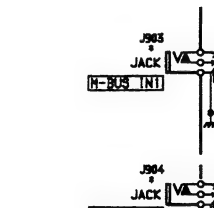
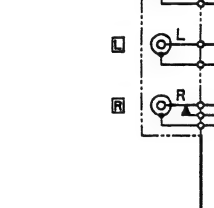
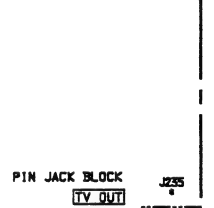
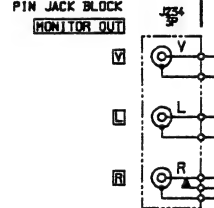
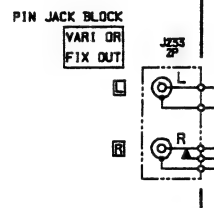
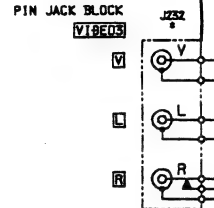
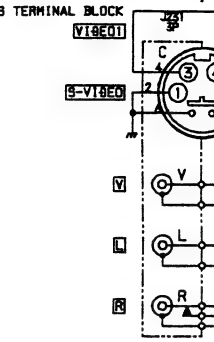
L

M

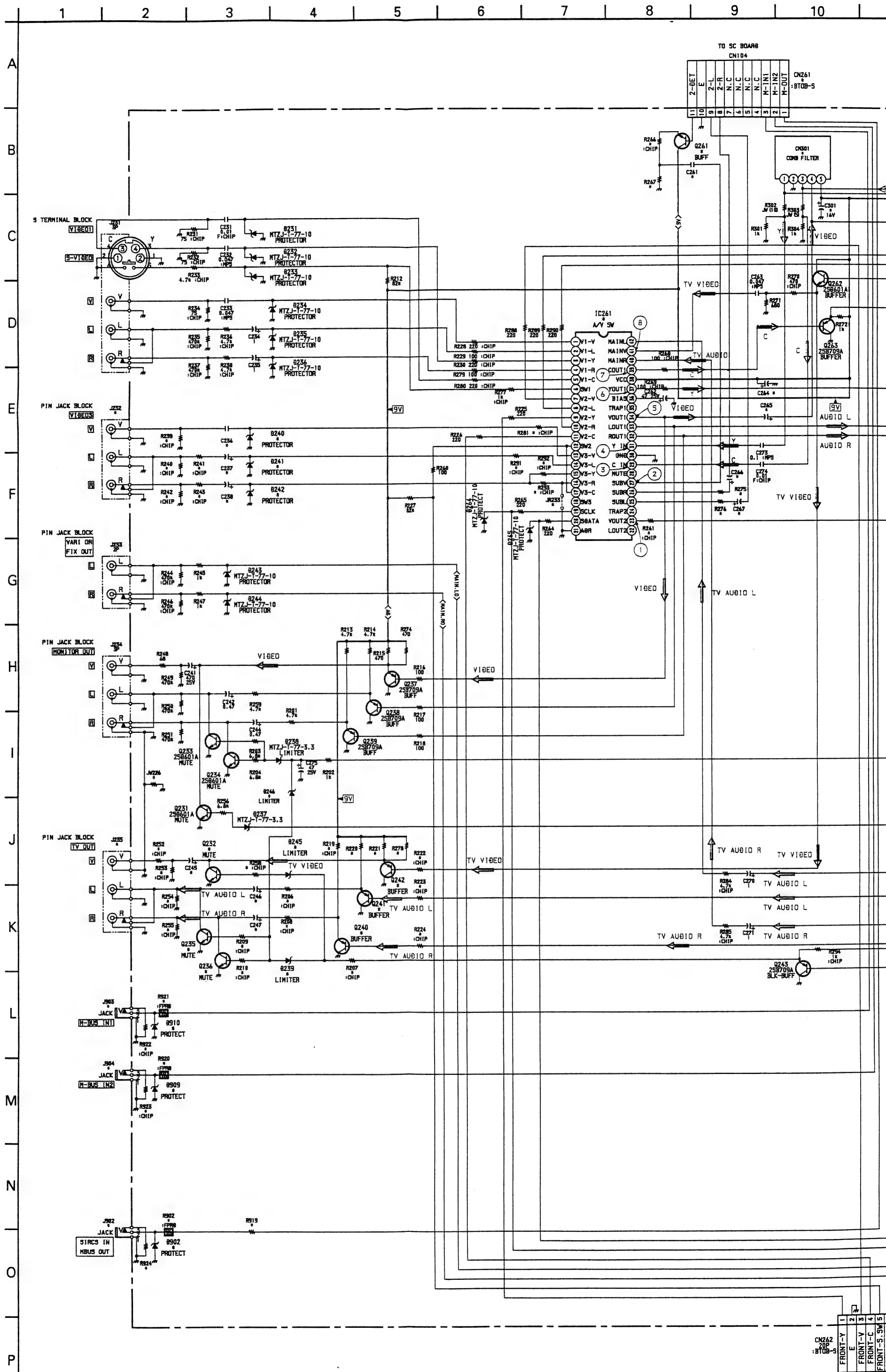
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O

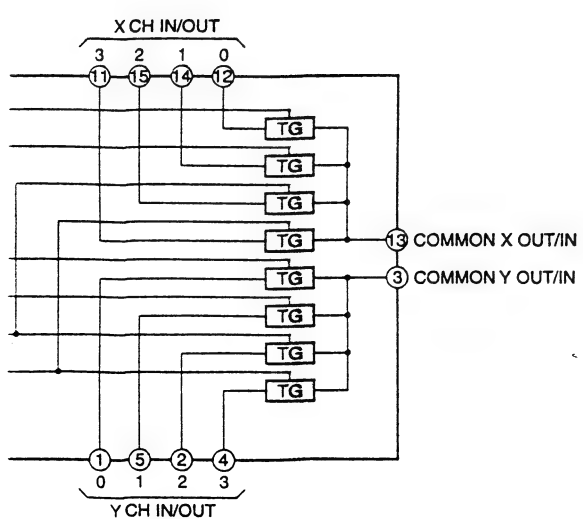
P



CEPT KV-27V20/29V20M)

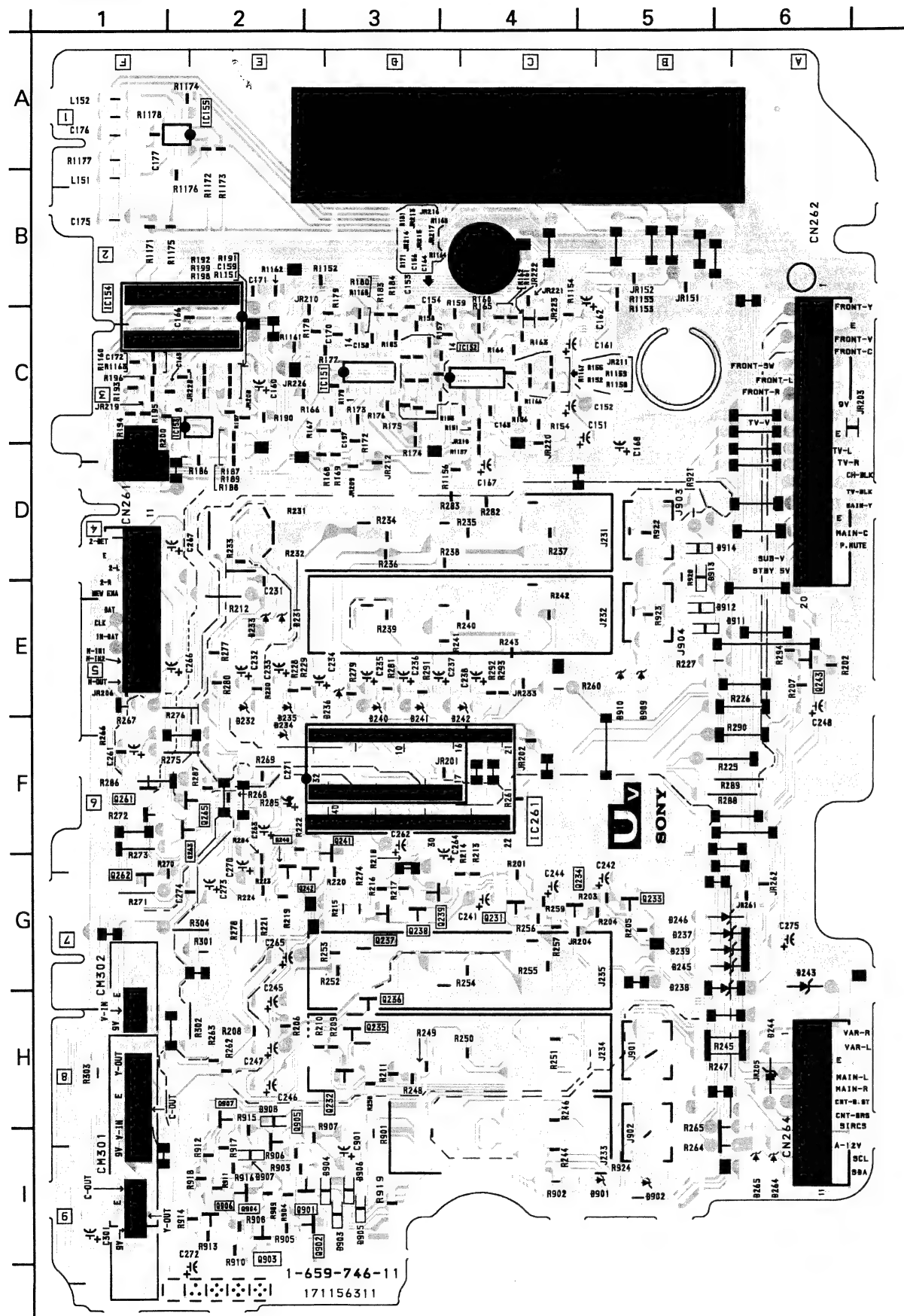


Pin diagram of the AD9850 10-bit DAC. The package has 28 pins. Pin 1 is Vcc, pin 28 is GND. Pins 6, 12, 16, and 19 are control pins: S1, S2, ADDRESS, and MUTE. Pins 23 and 24 are outputs: R OUT and L OUT. Pins 20, 27, and 22 are inputs: C IN, Y OUT, and Y IN. Pins 29 and 25 are outputs: C OUT and V OUT. The internal circuitry includes an I²C LOGIC block, a BIAS input, and various 6dB and -6dB gain stages and switches.



UV [A/V SW, EXT IN/OUT,
AUDIO SW, AUDIO BUFF.]

— UV BOARD —



UV BOARD

IC	
IC151	C-3
IC152	C-4
IC153	C-2
IC154	C-2
IC261	F-4

TRANSISTOR	
Q231	G-4
Q232	H-3
Q233	G-5
Q234	G-5
Q235	H-3
Q236	H-3
Q237	G-3
Q238	G-3
Q239	G-4
Q240	G-2
Q241	G-3
Q242	G-3
Q243	E-6
Q261	F-1
Q262	G-1
Q263	F-2
Q265	F-2

DIODE	
D231	E-2
D232	E-2
D233	E-2
D234	F-2
D235	E-2
D236	E-3
D237	G-6
D238	G-6
D239	G-6
D240	E-3
D241	E-3
D242	E-4
D243	G-6
D244	H-6
D245	G-6
D246	G-6
D264	I-6
D265	I-6
D902	I-5
D909	E-5
D910	E-5

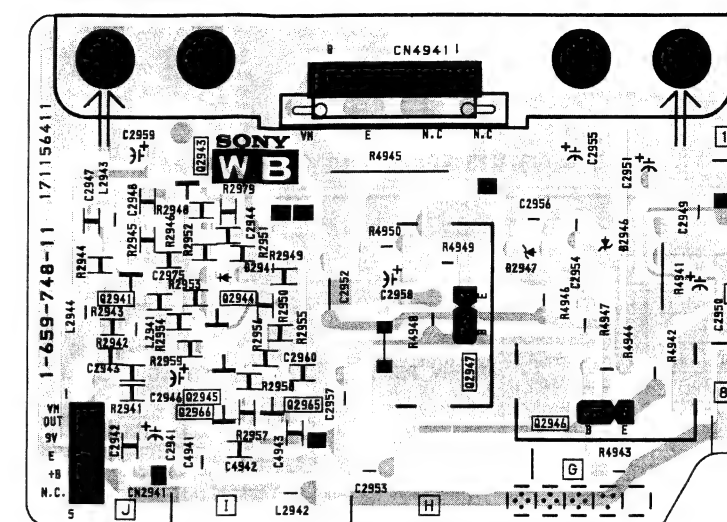
WB

[VELOCITY MOD.] (KV-27V35/29V35C/29V75M/32V35/34V35C ONLY)

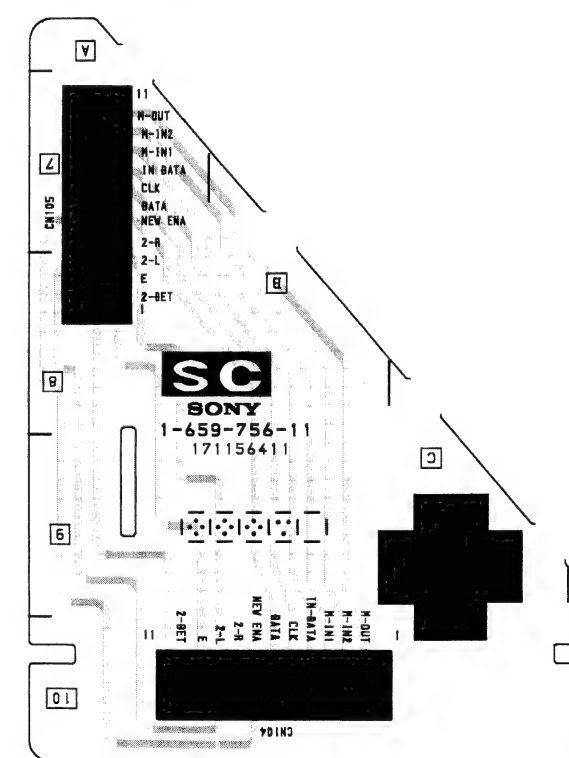
SC

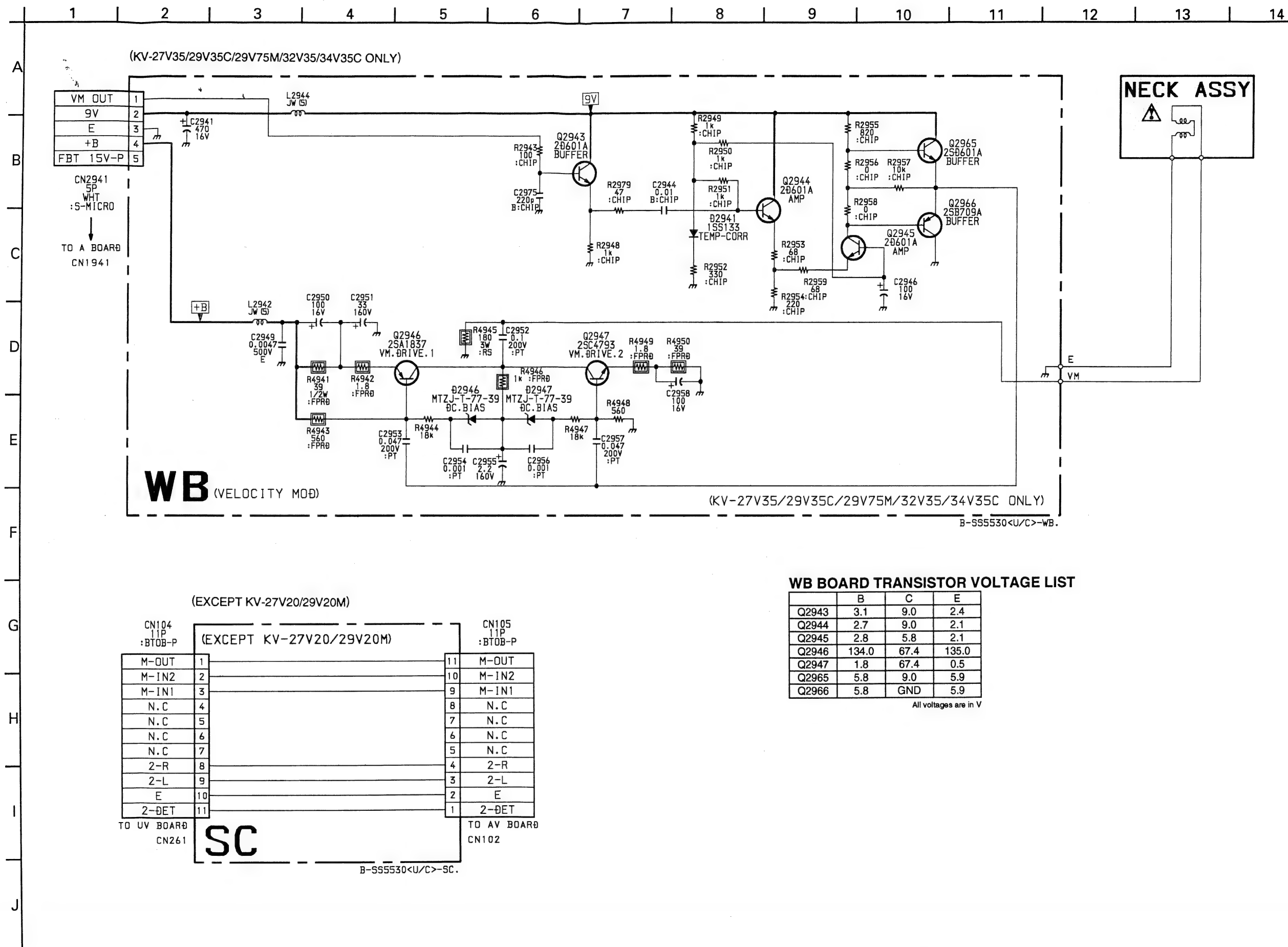
(EXCEPT KV-27V20/29V20M)

— WB BOARD —



— SC BOARD —





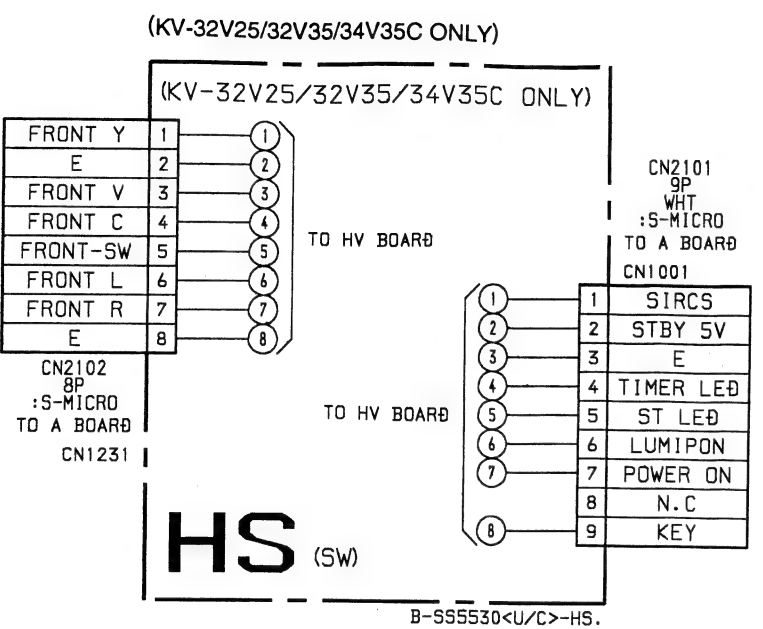
BOARD
101

JARD
31

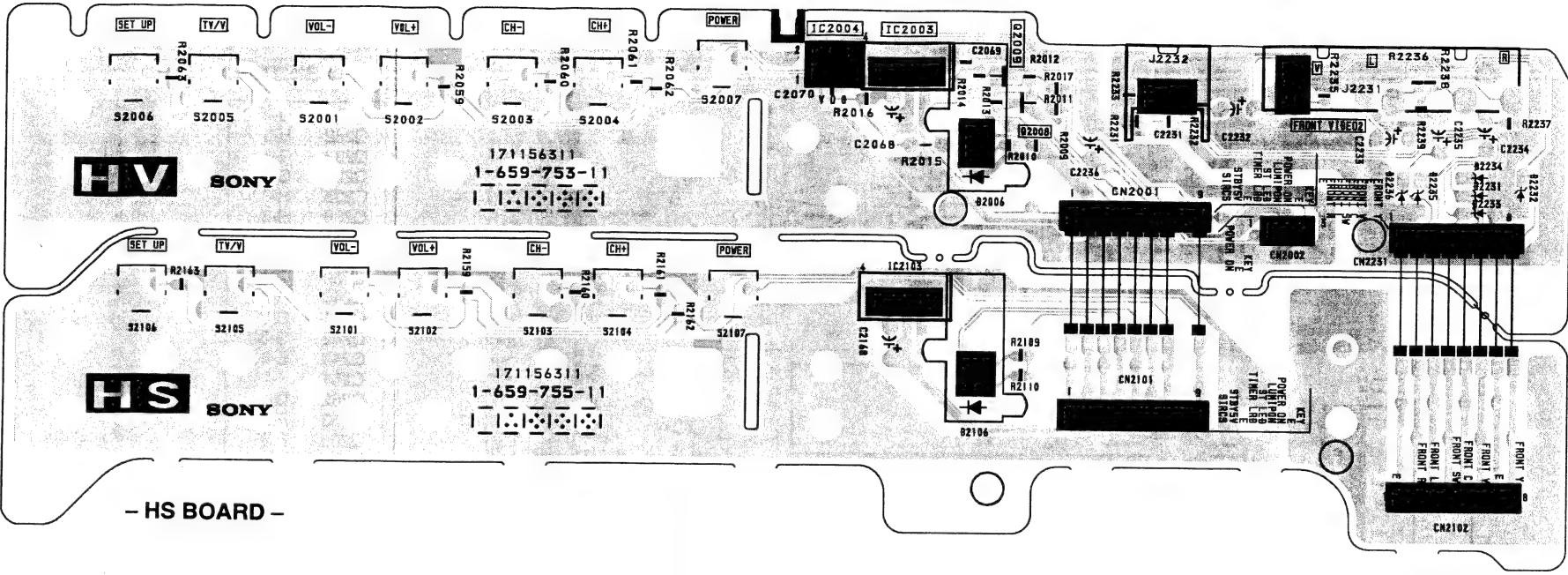
1
RO

J

ANEL



- HV BOARD -

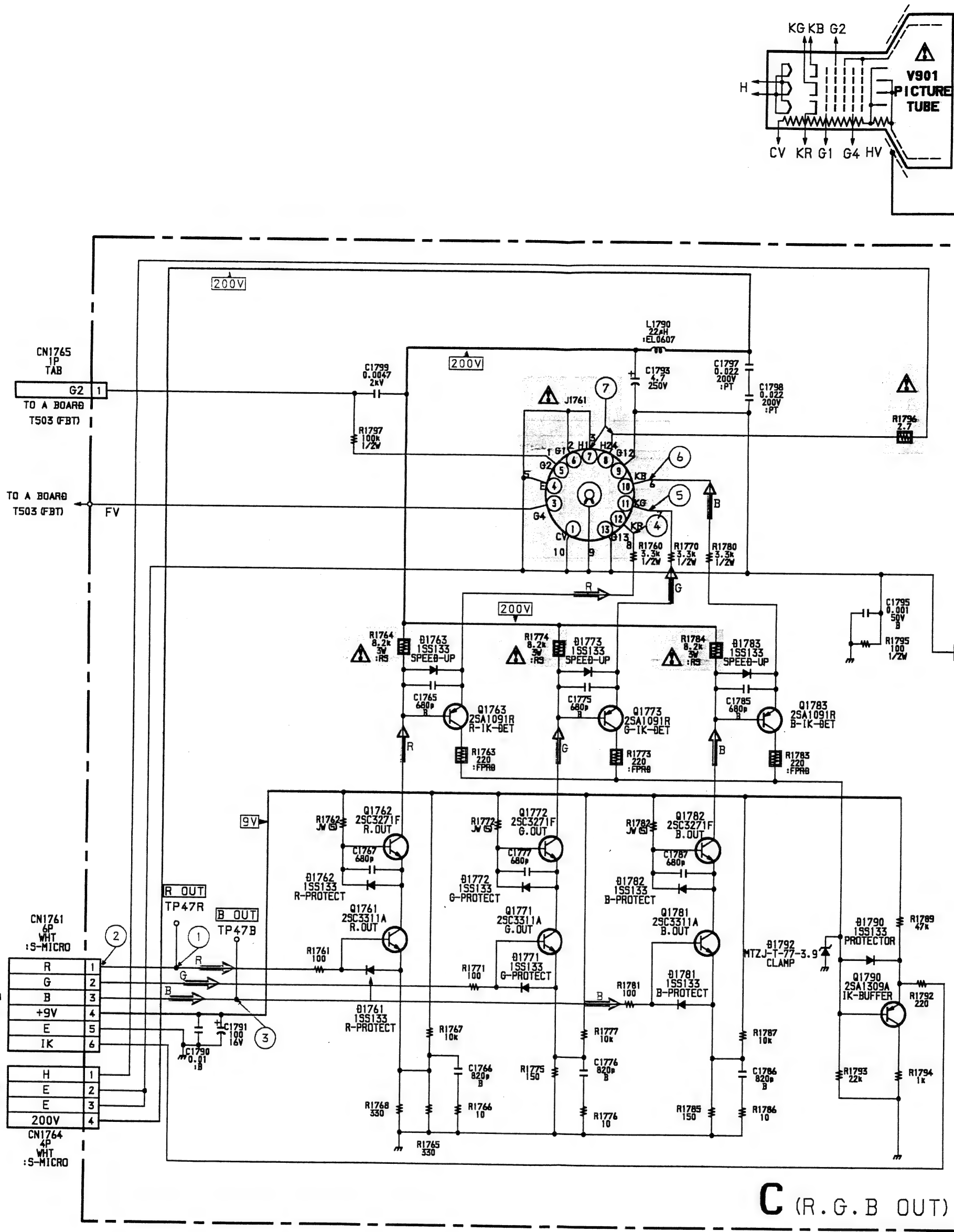


- HS BOARD -

HV BOARD * MARK LIST

	KV-27V20/27V25/29V20M/29V65M	KV-27V35/29V35C/29V75M	KV-32V25(US)/32V35/34V35C	KV-32V25 (CND)
C2231	#	#	#	0.01 F:CHIP
C2232	#	#	#	0.047 :MPS
CN2001	9P WHT-L :S-MICRO	9P WHT-L :S-MICRO	#	#
CN2002	#	3P WHT-L :S-MICRO	#	3P WHT-L :S-MICRO
CN2231	8P WHT-L :S-MICRO	8P WHT-L :S-MICRO	#	#
D2231	#	#	#	#
D2232	#	#	#	MTZJ-T-77-10
D2233	#	#	#	MTZJ-T-77-10
J2232	#	#	#	MTZJ-T-77-10
JW2001	#	#	#	S-JACK
JW2002	#	#	20MM	20MM
JW2003	#	#	20MM	20MM
JW2004	#	#	20MM	20MM
JW2005	#	#	20MM	20MM
JW2006	#	#	20MM	20MM
JW2007	#	#	20MM	20MM
JW2008	#	#	20MM	20MM
JW2231	#	#	20MM	20MM
JW2232	#	#	20MM	20MM
JW2233	#	#	20MM	20MM
JW2234	#	#	20MM	20MM
JW2235	#	#	20MM	20MM
JW2236	#	#	20MM	20MM
JW2237	#	#	20MM	20MM
JW2238	#	#	20MM	20MM
R2059	820 :CHIP	#	820 :CHIP	#
R2060	1k :CHIP	#	1k :CHIP	#
R2061	1.8k :CHIP	#	1.8k :CHIP	#
R2062	4.7k :CHIP	#	4.7k :CHIP	#
R2063	10k :CHIP	#	10k :CHIP	#
R2231	#	#	#	75 :CHIP
R2232	#	#	#	75 :CHIP
R2233	#	#	#	4.7k :CHIP
S2001	TACTILE-SW	#	TACTILE-SW	#
S2002	TACTILE-SW	#	TACTILE-SW	#
S2003	TACTILE-SW	#	TACTILE-SW	#
S2004	TACTILE-SW	#	TACTILE-SW	#
S2005	TACTILE-SW	#	TACTILE-SW	#
S2006	TACTILE-SW	#	TACTILE-SW	#
S2007	TACTILE-SW	#	TACTILE-SW	#

Mark : not mounted

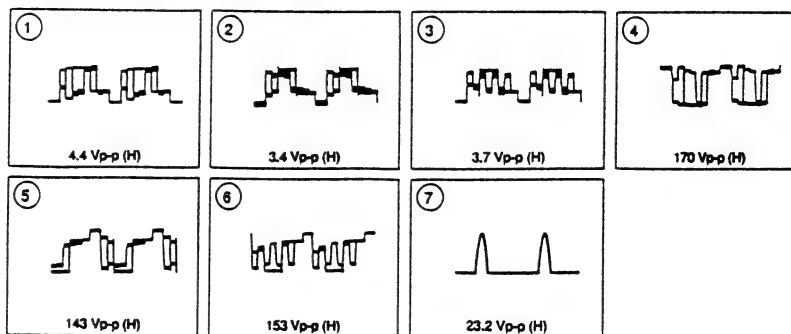


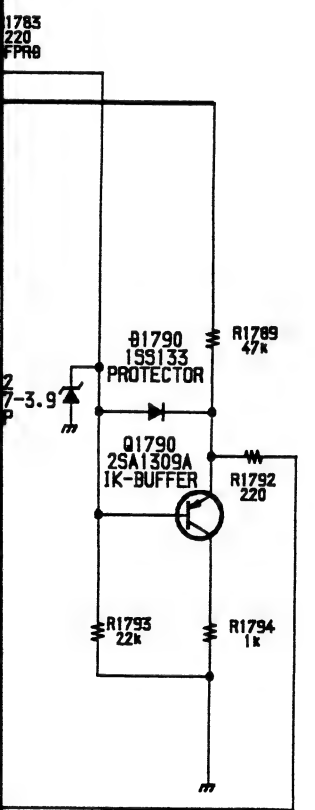
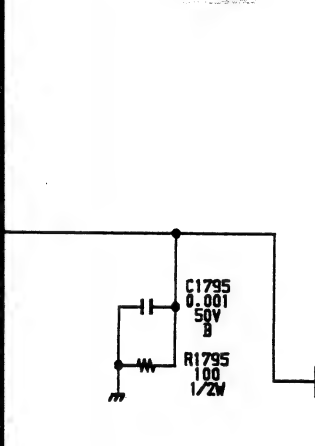
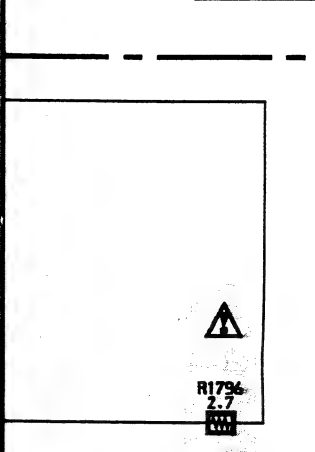
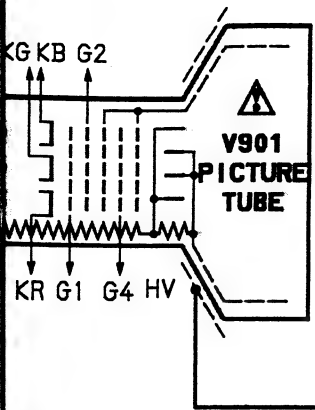
C BOARD TRANSISTOR VOLTAGE LIST

	B	C	E
Q1761	2.2	8.2	1.7
Q1762	8.7	134.1	8.2
Q1763	134.1	2.3	132.0
Q1771	1.8	8.2	1.3
Q1772	8.7	146.4	8.2
Q1773	146.4	2.3	144.1
Q1781	2.1	8.2	1.6
Q1782	8.7	133.7	8.2
Q1783	133.7	2.3	131.5
Q1790	2.2	0.2	2.5

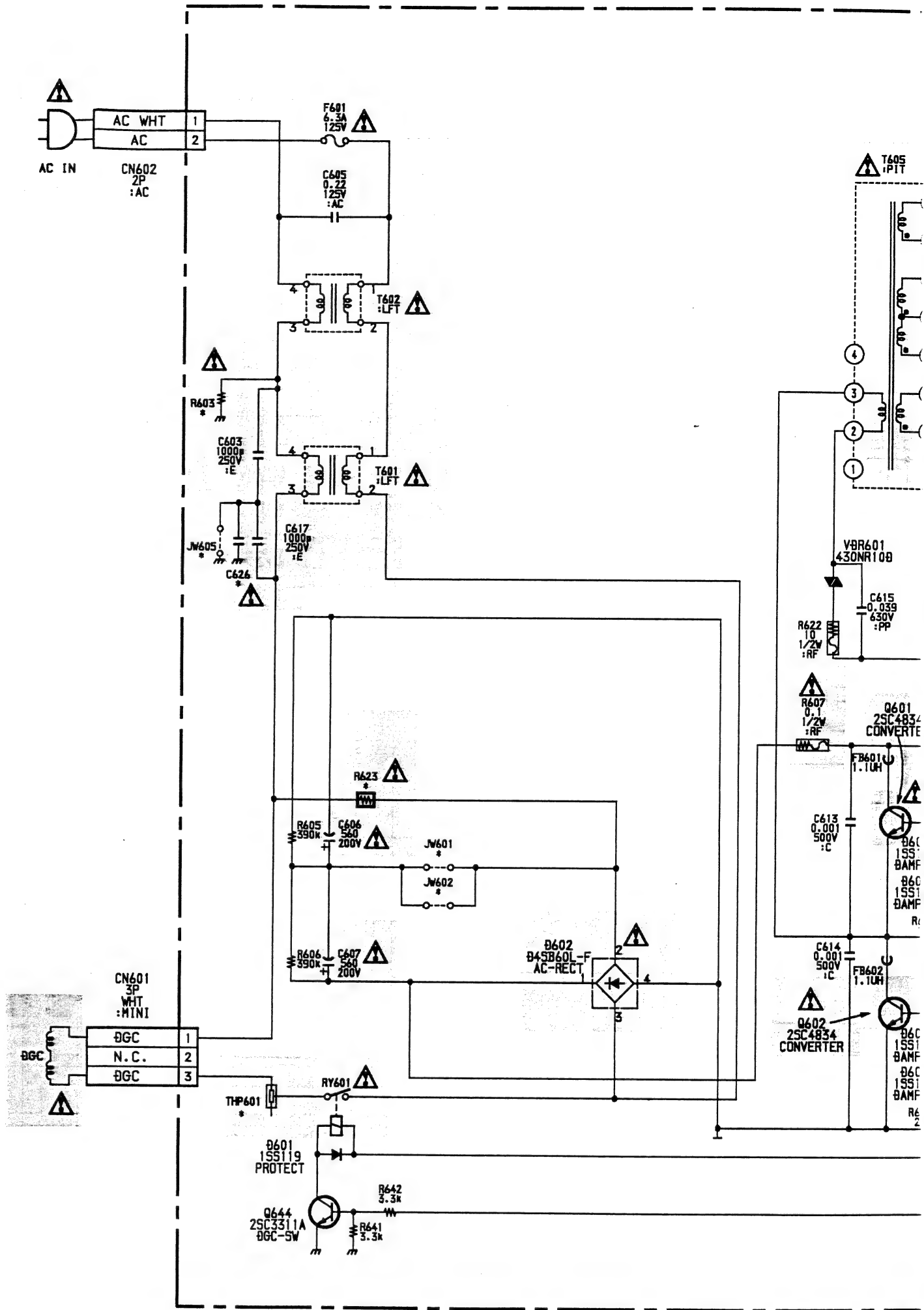
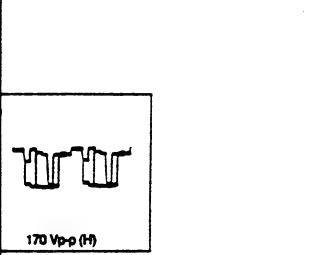
All voltages are in V

• C BOARD WAVEFORMS



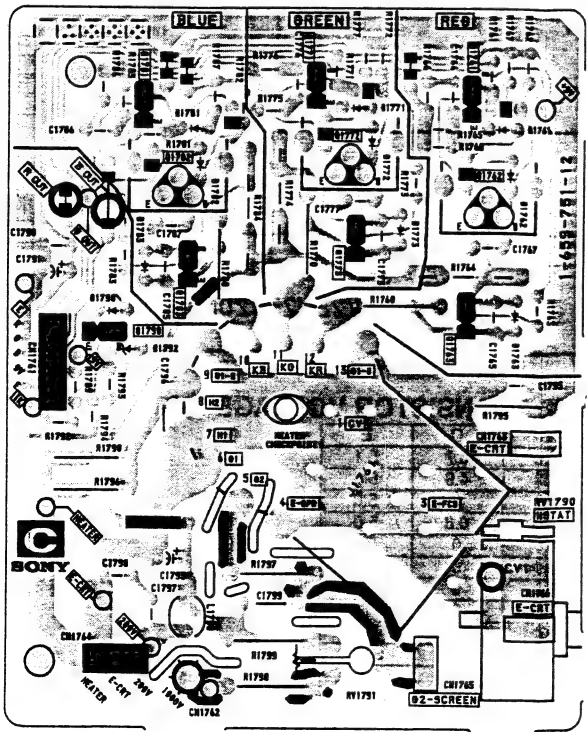


(R.G.B OUT)
B-S95530<U/C>-C..



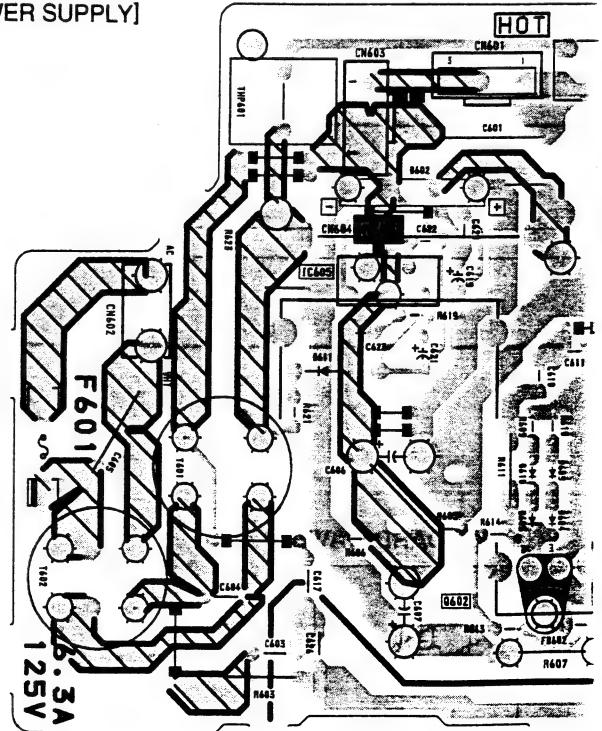
C [R.G.B OUT]

- C BOARD -

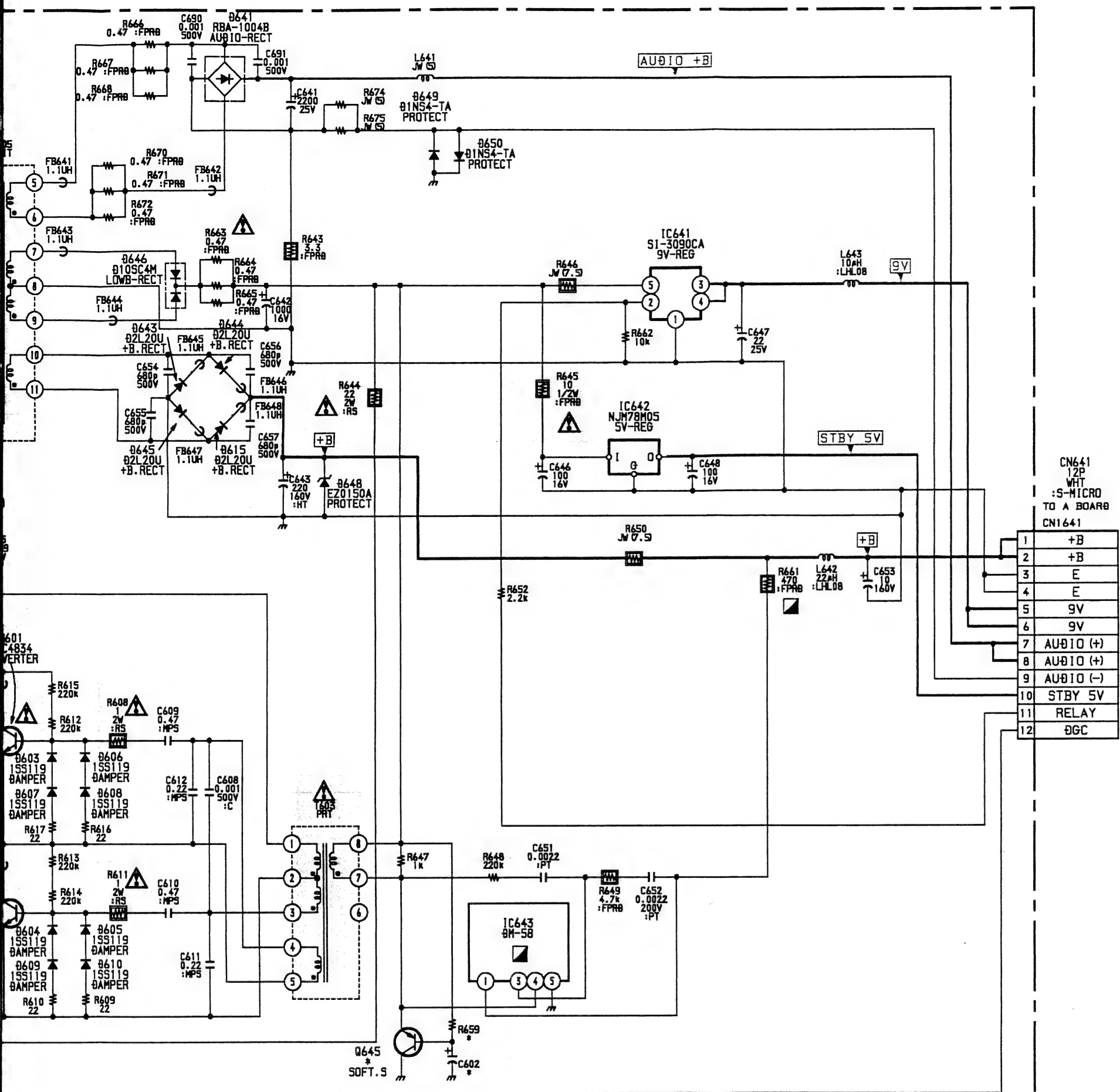


G [POWER SUPPLY]

- G BOARD -

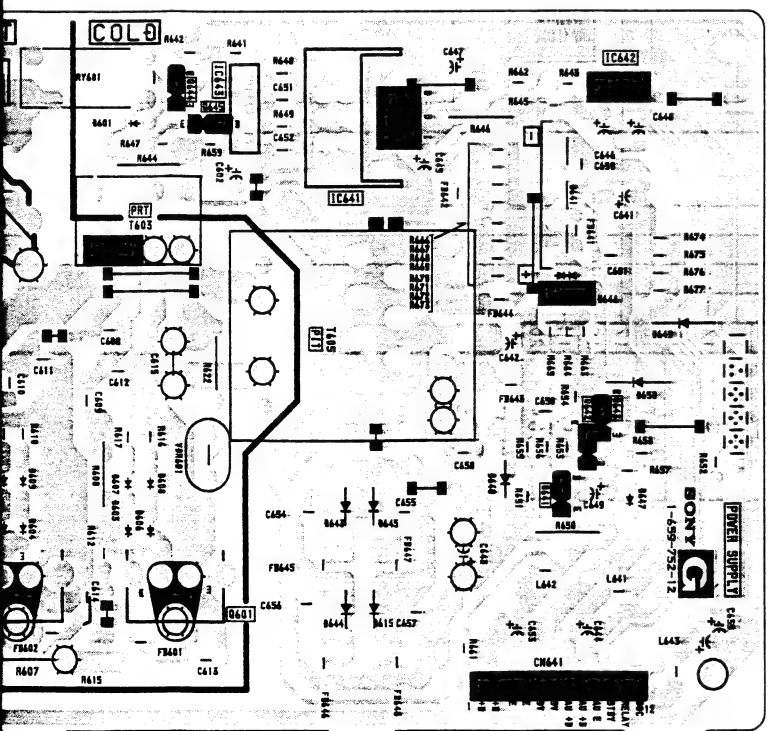






G (POWER SUPPLY)

B-SS5530<U/C>-0..



G BOARD TRANSISTOR VOLTAGE LIST

	B	C	E
Q601	145.2	294.0	147.5
Q602	-1.7	147.5	GND
Q644	0	10.5	GND

All voltages are in V

G BOARD IC VOLTAGE LIST

IC	pin	volt
IC641	1	GND
	2	3.9
	3	8.9
	4	8.9
	5	10.5
IC642	IN	9.5
	OUT	5.0
IC643	1	135
	2	NC
	3	2.5
	4	7.8
	5	GND

All voltages are in V

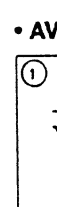
G BOARD * MARK LIST

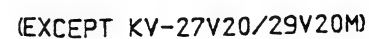
	EXCEPT KV-29V35C/34V35C	KV-29V35C/34V35C
C602	#	4.7
C626	#	100p 250V
F601	6.3A 125V	6.3A 250V
JW601	5MM	#
JW602	5MM	#
JW605	7.5MM	#
Q645	#	2SA1309A
R603	2.2M 1/2W	8.2M 1W
R623	1 20W :RB	3.9 20W :RB
R659	#	10k
THP601	1-809-539-11	1-809-827-11

Mark : not mounted

Schematic diagrams
← [C], [G] boards

Schematic diagrams
[AV], [K] boards →



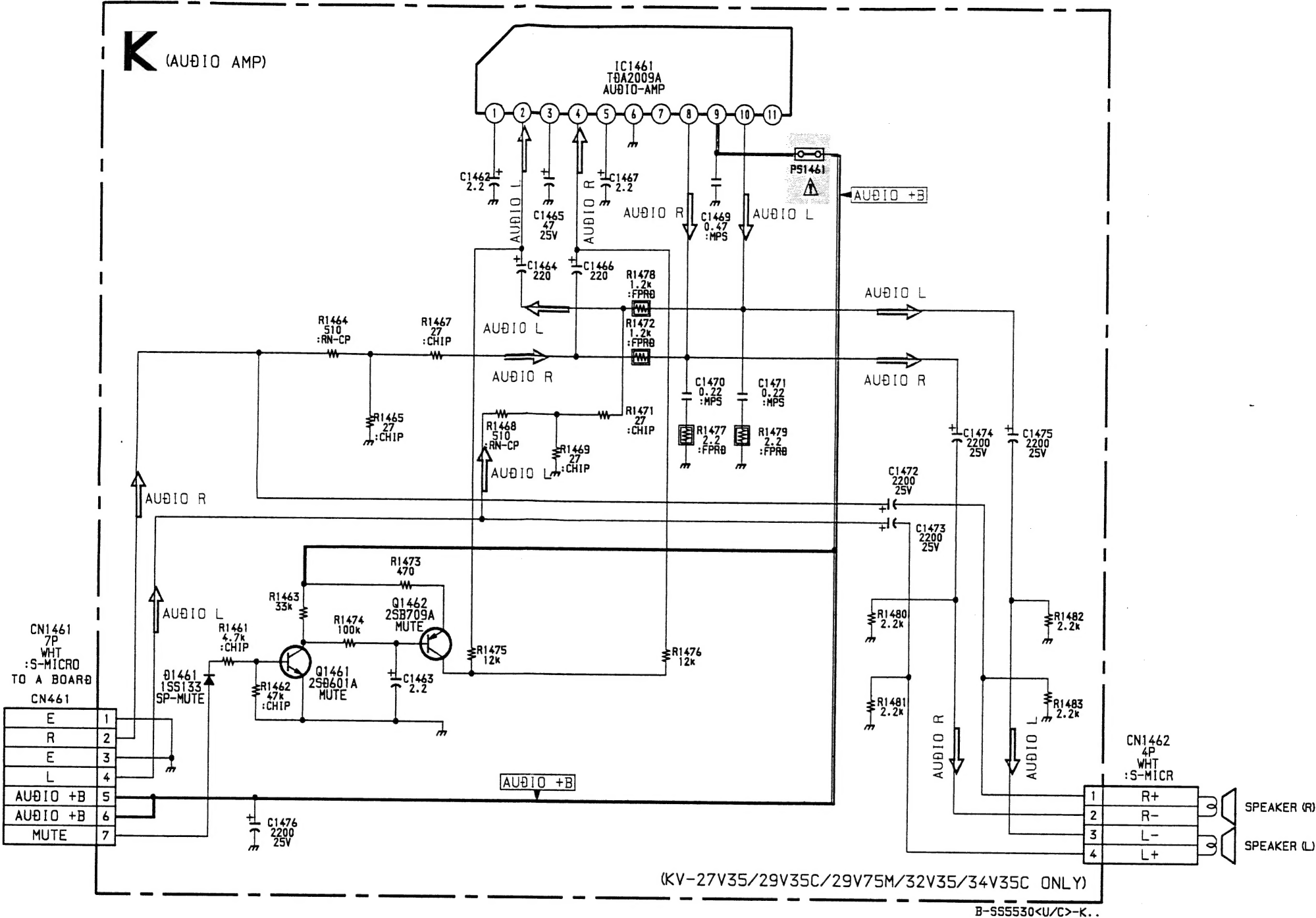


B-SS5530<U/C>-AV.

	B	C	E
Q101	5.8	8.7	5.1
Q103	4.3	4.9	5.0
Q104	5.0	0	5.0
Q105	5.0	0.8	5.0
Q1901	5.0	0	0
Q1902	5.0	0	0
Q1906	5.0	0	0
Q1908	5.0	0	0
Q1911	0	5.0	0
Q1912	0.7	0	GND
Q1914	4.9	0	5.0
Q1916	0.2	5.0	0
Q1917	0.2	5.0	0

All voltages are in V

(KV-27V35/29V35C/29V75M/32V35/34V35C ONLY)



AV BOARD * MARK LIST

	KV-27V35/29V35C/29V75M/32V35/34V35C	KV-27V25/29V65M/32V25
C101	1	#
C102	0.0022 B:CHIP	#
C104	10	#
C106	47 25V	#
C108	100 16V	#
C109	220p CH:CHIP	#
C110	0.047 B:CHIP	#
C111	1	#
C113	220 16V	#
CN103	4P BLK :S-MICRO	#
D101	MTZLT-T-77-5.6C	#
D103	1SS133	#
D104	1SS133	#
L102	10uH :FLR50	#
L103	JW (5)	#
L104	JW (5)	#
L105	100uH :FLR50	#
Q101	2SC3311A	#
Q103	2SB709A	#
Q104	2SB709A	#
Q105	2SB709A	#
R101	4.7k :CHIP	#
R102	27k :CHIP	#
R103	39k :CHIP	#
R104	680 :CHIP	#
R106	22k :CHIP	#
R107	22k :CHIP	#
R108	22k :CHIP	#
R109	22k :CHIP	#
R112	2.2k	#
R113	100k :CHIP	#
R114	1M :CHIP	#
R115	10k :CHIP	#
R116	10k :CHIP	#
R117	4.7k :CHIP	#
U101	BTF-LA402	#

Mark : not mounted

AV BOARD IC VOLTAGE LIST

	pin	volt		pin	volt
C1901	1	0.2	IC1903	7	0
	2	0.2		8	1.3
	3	NC		9	0
	4	NC		10	GND
	5	NC		11	GND
	6	NC		12	GND
	7	0.4		13	GND
	8	GND		14	0.2
	9	NC		1	GND
	10	NC		2	GND
	11	8.7		3	NC
	12	GND		4	5.0
	13	GND		5	NC
	14	4.9		6	0.2
C1902	1	0.2		7	5.0
	2	0.2		8	0.4
	3	5.0		9	NC
	4	1.3		10	0.4
	5	0		11	0
	6	1.3		12	0

All voltages are in V

K BOARD IC VOLTAGE LIST

IC1461	pin	volt
IC1461	1	1.5
	2	4.2
	3	12.2
	4	4.2
	5	1.5
	6	GND
	7	NC
	8	0.2
	9	22.1
	10	0.2
	11	NC

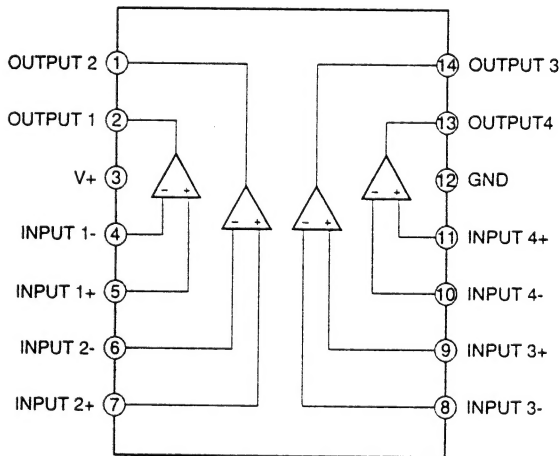
All voltages are in V

K BOARD TRANSISTOR VOLTAGE LIST

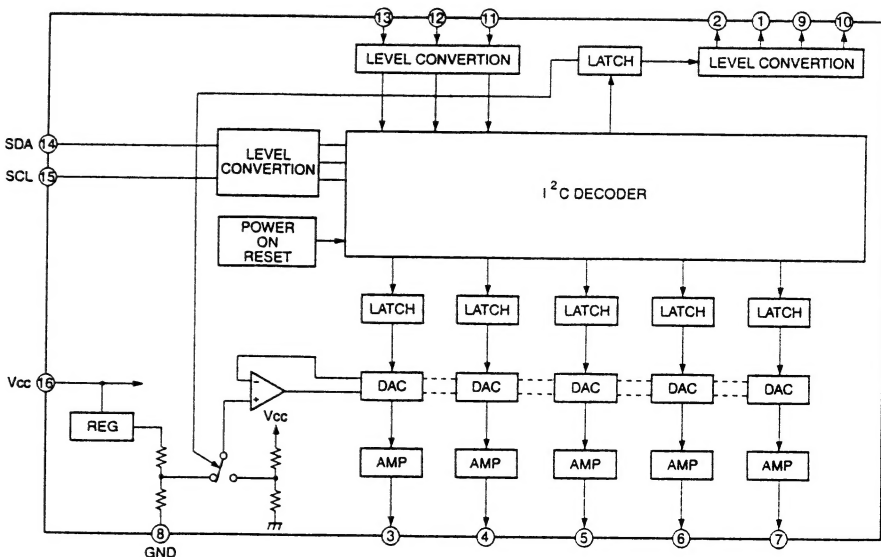
	B	C	E
Q1461	0.7	0	GND
Q1462	20.0	20.7	20.7

All voltages are in V

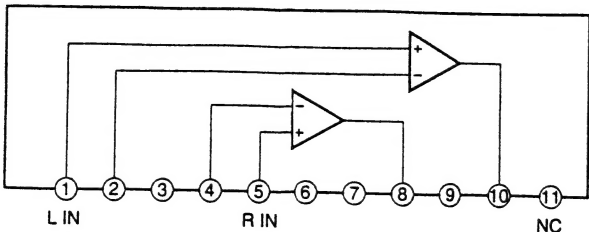
AV BOARD IC1902 NJM2901M



AV BOARD IC1901 CXA1315M



K BOARD IC1461 TDA2009A



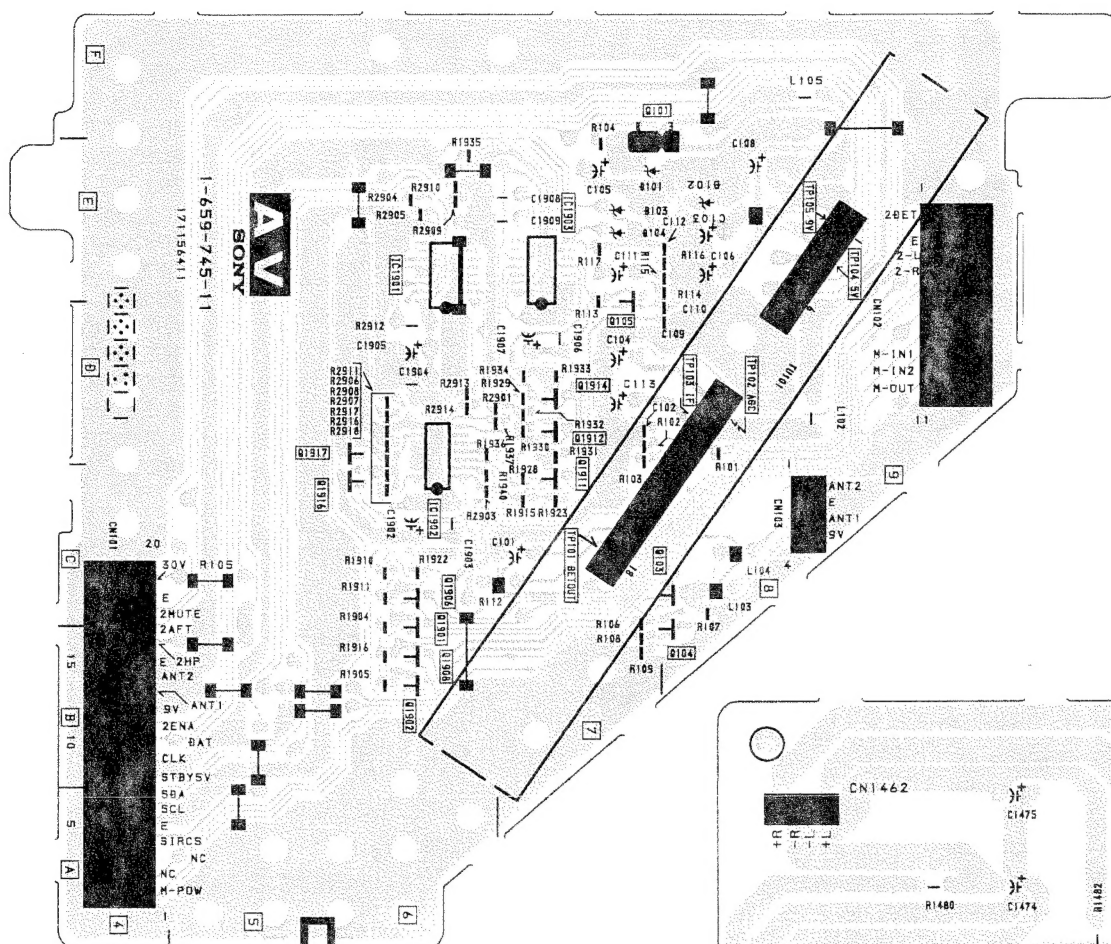
- AV BOARD - (EXCEPT KV-27V20/29V20M)

AV

[SUB TUNER, D/A CONV.]

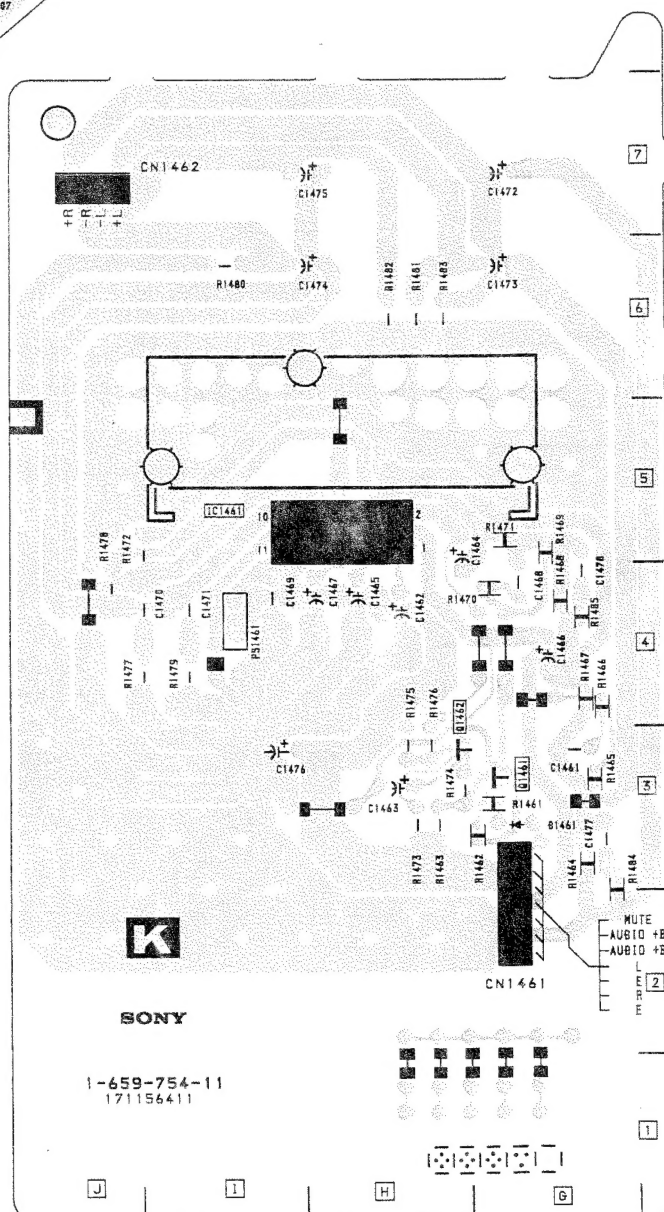
K

[AUDIO AMP]



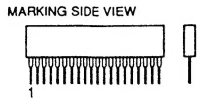
- K BOARD -

(KV-27V35/29V35C/29V75M/32V35/34V35C ONLY)



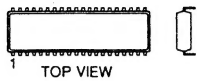
4-4. SEMICONDUCTORS

BH3856FS-E2



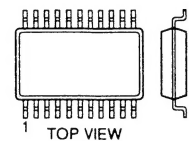
32pin SIP

CD4052BCN



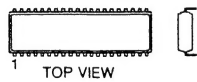
16pin DIP

CXA1315M



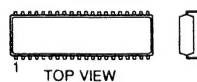
16pin SOP

CXA2025S



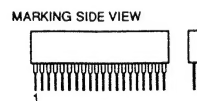
48pin DIP

CXP85640-005S



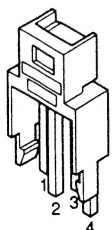
64pin DIP

DM-58



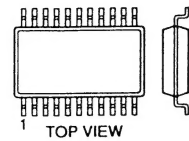
4pin SIP

IS474



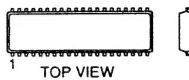
LM2901M

NJM2902M-TE2



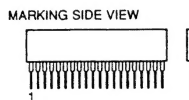
14pin SOP

MM1313AD



42pin DIP

NJM2129M-TE2



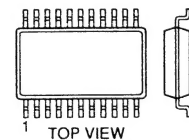
14pin SIP

NJM2903M

NJM2904M

ST24C02FM6TR

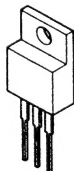
UPC4558G2



8pin SOP

NJM78M05FA

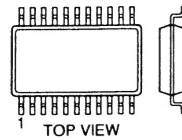
TA7805S



SBX1790-51

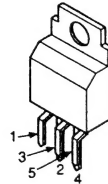


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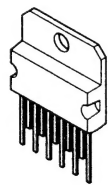


32pin SOP

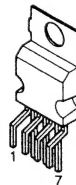
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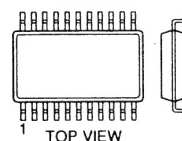
TDA2009A



TDA8172



TDA8315T/N3A-T



24pin SOP

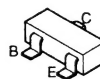
2SA1037AK-T146-R

2SA1162-G

2SA1330-06

2SC1623-L5L6

2SD601A-Q

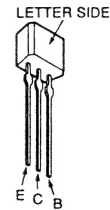


2SA1091-0



2SA1175-HFE

2SC2785-HFE



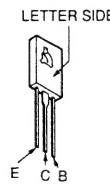
2SA1837

2SC4159-E

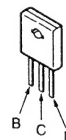
2SC4793



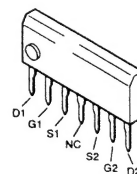
2SC2611



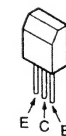
2SC4834M



2SC4927-01



2SD774-34



D10SC4M



D1NS4

MTZJ-3.3

MTZJ-33A

MTZJ-6.2B

MTZJ-7.5B

RD10ESB2

RD3.3ES-B2

RD3.9ES-B2

RD33ESB1

RD39ES-B2

RD4.3ES-B3

RD5.6ESB2

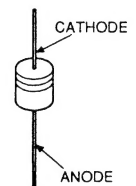
RD5.6ESB3

RD6.2ESB2

RD7.5ESB2

1SS119-25

1SS133T-77



D2L20U

EGP20G

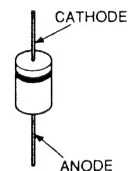
EL1Z

EZ0150AV1

GP08D

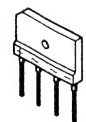
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MTZJ-T-77-4.3C

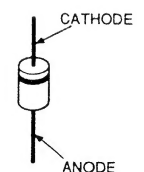


D4SB60L

RBA-1004B



ERC06-15S



ERD29-08J

